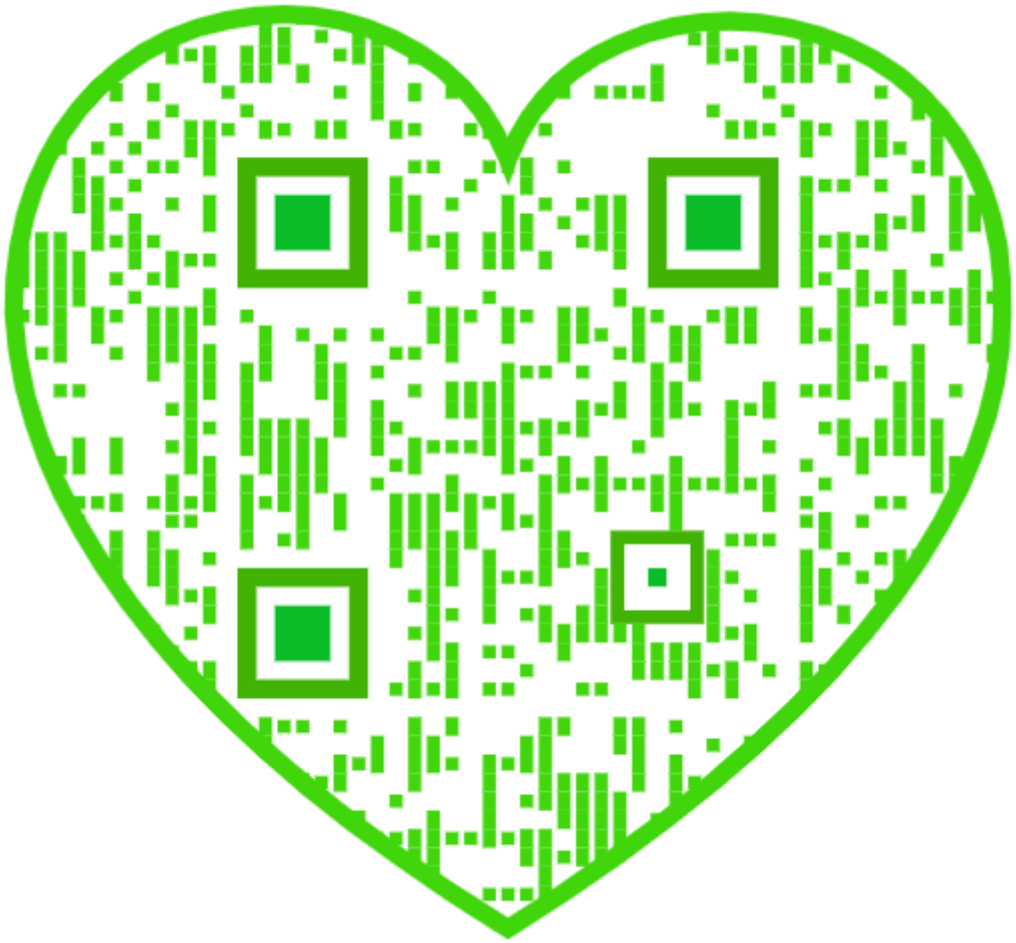
BOWERSMITH'S VETERINARY SURGERY

ON DISEASES OF HORSES CATTLE SHEEP & SWINE.

SF
751
.B78



LIBRARY OF CONGRESS.

Chap. SF451 Copyright No.

Shelf .B78

UNITED STATES OF AMERICA.

3801.C2

THE

COUNTRYMAN'S EXPERIENCE.

FARRIERY & SURGERY.

EMBRACING

A THIRTY YEARS EXPERIENCE OF THE AUTHOR BOTH IN THEORY AND PRACTICE, TOGETHER WITH THE EXPERIENCE OF NOTED GERMAN AND INDIAN DOCTORS; WITH A COMPLETE PATHOLOGY OF ALL DISEASES TO WHICH THE

Horse, Cow, Sheep & Swine

ARE SUBJECT, WITH A FORMULA OF INSTRUCTIONS AND MODE OF TREATMENT.

ALSO

A PRACTICAL THEORY OF THE GOVERNMENT AND MANAGEMENT OF THE

HORSE

UNDER ALL CIRCUMSTANCES.

BY

ISAAC BOWERSMITH,

PROFESSOR OF VETERINARY SURGERY ETC.

PRINTED AT THE BANNER OFFICE, WESTERVILLE, O.

1872.

Entered according to Act of Congress, in the year 1872,

By ISAAC BOWERSMITH,

In the Office of the Librarian of Congress, at Washington, D. C.

SF751
.B78

PREFACE.

THE HORSE.

Under this first division will be considered those animals which aid the powers of man. It naturally begins with considering the Animals which constitute the most valuable part of the farmer's property; their origin &c.

It is hoped that this volume will contribute to the amusement, and the profit of the farmer and better the condition both of himself and of the animals entrusted to his care.

They may afford him a useful counsellor, when

employed in the labours of his station, and raise his mind to a serious, but delightful contemplation of the objects which Providence has spread around us for our admiration and profit.

In the Sacred Volume, which, beside its higher claims to stand at the head of the Farmer's Library, contains the oldest authentic record of past transactions, we are told that, so early as 1650 years before the birth of Christ, the horse had been domesticated by the Egyptians. When Joseph carried his father's remains from Egypt to Canaan, "there went up with him both chariots and horses."

One hundred and fifty years afterwards, the horse constituted the principal strength of the Egyptian army. Pharaoh pursued the Israelites with "six hundred chosen chariots, and with all the chariots of Egypt."

From the records of the Old Testament, we are likewise enabled to ascertain the precise period of time, when in Egypt and Canaan, and the neighbouring countries, this animal began to be domesticated. 1920 years before the birth of Christ, when Abraham, having left Haran, in obedience to the divine command, was driven into Egypt by the famine which raged in Canaan,(Gen. 12. 16.) Pharaoh offered him sheep and oxen, and asses and camels. Horses would doubtless have been added had they been subdued in Egypt.

When, fifty years afterwards, Abraham journeyed to Mount Moriah, to offer up his only son, he rode an ass, which, with all his wealth and power, he would scarcely have done, had the horse been known.(22. 3.)

Thirty years later, when Jacob returned to Isaac with Rachel and Leah, an account is given of the

number of oxen, sheep, camels, goats, and asses, which he sent to appease the anger of Esau, but not one horse is mentioned.(Gen. 32. 14.)

It is not until twenty-four years after this, when the famine devastated Canaan,(Gen. 14. 19.) and Jacob sent into Egypt to buy corn, that horses are first heard of. "Wagons" probably carriages drawn by *horses*, were sent by Joseph into Canaan to bring his father into Egypt. It would seem, however, that horses had been but lately introduced, and were not numerous, or not used as beasts of burden; for the whole of the corn, which was to be conveyed some hundred miles, and was to afford subsistence for Jacob's large household, was carried on asses.

It appears, then, that about 1740 years before Christ, horses were first used in Egypt; but they soon afterwards became so numerous as to form a considerable portion of the Egyptian army: and when the Israelites returned to Canaan, the horse had been introduced and naturalized there; for the Canaanites "went out to fight against Israel with horses and chariots very many."(Joshua 11. 4.)

The sacred volume, therefore, clears up a point upon which no other record throws any light—namely, the period when the horse first became the servant of man, at least in one part of the world, and that the most advanced in civilization, and before Greece was peopled. A long time must have elapsed before man was able to ascertain the value and peculiar use of the animals that surrounded him. He would begin with the more subordinate —those which were most easily caught, and most readily subdued; and the benefits which he derived from their labours would induce him to attempt

the conquest of superior quadrupeds. In accordance with this the writings of Moses shew us that, after the ox, the sheep, and the goat, man subdued the ass, and then the camel, and. last of all, the horse became his servant: and no sooner was *he* subdued, and his strength and docility and sagacity appreciated, than the others were comparatively disregarded, except in Palestine, where the use of the horse was forbidden by divine authority, and on extensive and barren deserts, where he could not live.

From Egypt the use of the horse was propagated to other and distant lands; and, probably, the horse himself was first transmitted from Egypt to several countries. The Greeks affirm, that Neptune struck the earth with his trident, and a horse appeared. The truth is, that the Thessalians, the first and most expert of the Grecian horsemen, and likewise the inhabitants of Argos and Athens, were colonists from Egypt.

The Bible likewise decides another point, that Arabia, by whose breed of horses those of other countries have been so much improved, was not the native place of the horse. Six hundred years after the time just refered to, Arabia had no horses.

Solomon imported spices, gold, and silver, from Arabia; but all the horses for his own cavalry and chariots, and those with which he supplied the Phœnician monarchs, he procured from Egypt.

In the seventh century after Christ, when Mahomet attacked the Koreish near Mecca, he had but two horses in his whole army; and at the close his murderous campaign, although he drove off twenty-four thousand camels, and forty thousand sheep, and carried away forty thousand ounces of

silver, not a horse appears in the list of plunder.

There is a curious record of the commerce of different countries at the close of the second century. Among the articles exported from Egypt to Arabia, and particularly as presents to reigning monarchs, were horses.

In the fourth century two hundred Cappadocian horses were sent by the Roman emperor as the most acceptable present he could offer a powerful prince of Arabia.

So late as the seventh century, the Arabs had few horses, and those of little value. These circumstances sufficiently prove that, however superior may be the present breed, it is comparatively lately that the horse was naturalized in Arabia.

The horses of Arabia itself, and of the south eastern parts of Europe, are clearly derived from Egypt; but whether they were there bred, or imported from the south-western regions of Asia, or, as is more probable, brought from the interior, or northern coasts of Africa, cannot with certainty be determined.

CHAPTER 1.

PATHOLOGY.

A general Pathology of acute diseases is made the special object of this work.

The Horse is more like man, in regard to general structure, and the pathology of his diseases, than any other animal.

As a rule, although not without some exceptions, the causes which produce disease in man, operate similarly upon the Horse, having the same effect upon the one, as upon the other; and the same remedies may be used for both with equal success and effect.

In the long train of maladies to which the Horse is subject, Fever, or acute action, occurs in nine tenths of all the cases: and it is equally true; that in all diseases of acute character, fever is present as a primary,or as an attendant condition.

These causes are ever present and active in an attack of acute diseases, and to which it may be wholly attributed; viz:

First, a derangement of the sensorial or nervous system. Second, a derangement of the circulatory System—Blood. Third, a derangement of the secretory and excretory functions—fluids.

THE DIRECT

morbid causes of Acute diseases in the Horse are referable to four classes, namely:

1. The application of cold to the surface of the body, and to the lungs, producing recrementiceous

action, or a return of perspiratory matter from the surface to internal organs, leaving the vessels of the surface in a closed or spasmodic condition: this is by far the most common cause of Acute disease.

2. Irritating substances generate within the body of the horse, wholly independent of any organic action: this class of causes is usually generated in the passages, and consists of worms, acids, mucus, and other irritating substances, resulting from unwholsome feed, creating suppressed bile, by fermenting or by some putrefactive process.

3. Morbific agents generated out of the animal body, consisting either of deleterious floatings in the air, or of the sensible properties of the atmosphere, or, finally of the mechanical causes, namely: miasma, noxious gasses, heat, cold, electricity, humidity, and mechanical injuries.

4. Those which are generated by morbid organic action of the living system, constituting the various contagions; such as glanders, distemper, etc.

The principal causes embraced in the last two heads are so extensive in their influence on the horse, and so indispensable to be understood; that a thorough investigation should be given them.

The different diseases are fully furnished with the proper facts as they severally occur, in the after pages of this book, it being too tedious for the present subject.

The inflammatory diseases of the horse are numerous, but his fevers are few: a febrile state being generally brought on by the inflammation of some important organ. Inflammation may be considered as general or diffused, and local or confined, and both seem to arise from an affection of the blood vessels, and perhaps from a peculiar state of the

blood itself.

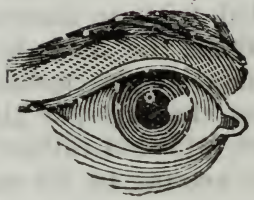
General or diffused inflammation constitutes fever or extensive inflammatory affection, and appears to consist in an increased action of the heart and arteries, accompanied with an increase of heat. In some instances where the fever is purely symptomatic, and dependent on the inflammation of some important organ, as the lungs, or the intestines, the circulation appears retarded rather than increased, from interruption arising to its passage through the heart.

Local or confined inflammation is also dependent on an affection of the blood vessels, but confined principally to the blood vessels of the part affected.

It is betokened by redness of the skin, tumor or swelling, heat and tenderness, with pain. Inflammations, both diffused and local, are brought on by excitements, such as over feeding, excessive heat, reaction produced after cold, and the reaction produced by inordinate exertion.

Those more exterior, arising from injuries, the application of improper substances, &c. Inflammations *terminate* in various ways; but it is to be remarked, that in consequence of the very large circulatory system of the horse, his febrile affections rage higher, and terminate sooner than in man.

The usual termination of inflammatory affection in the horse, are by resolution, effusion, suppuration, and gangrene.



CHAPTER II.

Bowersmith's Receipes and Formula

For the Cure and Treatment of

DISEASES OF THE HORSE.

A knowledge of the anatomy of the eye, which is rarely understood by the uninitiated, would take too much space in this small volume to write on in detail. I will therefore be brief, giving on the subject what may be more readily understood by the general reader, reserving further observation on the subject to be given in this book.

INFLAMMATION OF THE EYE.

In the first stages of the disease, apply a Wash or Lotion, according to the season of the year.
If the eye or eye-lid is much inflamed, bleed in the

vein below the eye, and rowel about three inches below the eye. Move the rowels every day; let them remain ten or twelve days, apply the Wash or Lotion every day until cured. It is, also, best to use some of the Cleansing Powder every day.

The horse should be kept on low diet, and not over-heated or worked very hard. Bran mash is the best to feed; do not feed corn. If there is a white speck in the centre of the sight of the eye, seemingly deep seated, there is no help, as the nerve is affected; but if the eye-lid swells, or the eye runs water, there is a good chance to cure, with attention. If there is a film over the sight, take 2 grs. of Sugar of Lead, 4 grains Chloride of Lime, one drachm Tincture of Opium, 2 ozs. soft water, and apply every day.

EYE WASH FOR COLD WEATHER.

Linseed Oil 1 pint, Spirits of Ether 2 ozs., Gum Camphor ½ oz. Mix and let it stand in some warm place until the oil cuts the gum, then it is fit for use. Apply every morning with a vial.

EYE WASH FOR WARM WEATHER.

Sugar of Lead 2 drachms, Sulphate of Zinc 1 dr. Tincture of Opium ½ oz., 1 pint of soft water. Wash the eyes out well with cold water, and then apply the medicine every day, as directed above.

INDIAN EYE WATER.

Take a small handful of what is called Eye bright, several sage leaves, several privy leaves, and steep

them in a bowl of clean soft water; cover the bowl and set it in a large kettle of water: let it boil 30 minutes, settle, take it off and add 2 chargers of gun powder; stirring well, then strain, settle and bottle for use. This is one of the best vegetable Eye waters ever made for any and all sorts of sore eyes. You can weaken it by adding soft water as the case requires.

TO MAKE AN EYE WASH FOR MAN OR HORSE.

By subsequent experiments, I have found the following remedy to work well with either man or beast.

Take three hen eggs and break in a clean white bowl, beat well, and add one quart of pure rain water. Place it in a kettle of water and let it simmer over a slow fire, stirring frequently until it comes to a boil. Then take off and add $\frac{1}{4}$ oz. sulphate of zinc, $\frac{1}{2}$ oz. tincture of opium, mix well and strain through a fine cloth three times. Let it stand in the same vessel in a cool place for two days, when a curd will be formed, which will be found to be an excellent poultice for inflamed eyes, strengthening the lachrymal ducts and vision.

After the curd is removed, strain the liquid again and bottle for future use. It can be applied by dropping into the eye from two to three times a day after the eyes have been washed in cold water.

BLIND OR WOLF TEETH.

Blind or Wolf teeth. If such is the case, these teeth may be discovered, the former by rubbing

your thumb over the gum of the upper jaw, between the molar grinder and the tusk; it never comes through, but its presence is indicated by an unusual lump. When such is the case, throw the animal as directed on a former page, and with a sharp knife, make two deep incisions crosswise over the tooth, and with a forceps take firm hold of the tooth and extract it, if posible without breaking.

Wolf teeth are found immediately below the molar grinder, and should be removed in the same manner as Blind teeth.

These teeth effect the sight by their fangs extending over the lachrymal gland or duct, leading from the eye into the nostril, thus obstructing the usual discharges through its natural passage, causing inflammation of the duct, and a film to cover the sight.

After the teeth are removed, in either case a cure can be had by the use of the Eye Lotion and a dose or two of the Cleansing Powder.

CATARRH OF THE LACHRYMAL, OR POLYPUS IN THE NOSE

This disease is caused by an increased secretion of the mucus in the lachrymals, which should flow in watery substances from the eye, and pass off through the ducts into the nostrils, but instead, it runs down on the outside under the eye. It is in fact, if neglected, as likely to lead to total blindness as the Moon Eye. Its presence may be ascertained by the eye lashes and hair on the side of the head falling off. Its attacks are usually in both eyes at the same time, and causes much fever.

The horse should not be fed corn or other grain, but put on pasture. The best treatment for this

disease is to bathe the eyes frequently in cold water, cause counter-irritation, as directed in the preceeding article, and use freely the Cleansing Powder and Eye Lotion for at least two weeks. or until a cure is seen to be effected.

The polypus is an enlargement about two inches above the nostril, and frequently the size of a hens egg, which is a cyst or sack being filled with water, or thick fluid; this secretion on the lachrymal, inflames the eye. I have cured hundreds of cases by slitting the sack open and syringing it nearly full of corrosive linament; first putting on a twitch and slitting it open at the lower end; so that the contents can run out freely.

MOON EYES.

Which are known to Scientific practitioners as Specific periodic opthaima is a disease more to be dreaded than any other, to which the eye may be subject.

The sclerotic or outer white coat of the eye wears a deep seated, red appearance over the entire cornea. This may be attributed to a morbid condition of the Blood, which effects more or less, all the weaker members of the Horse, which if neglected will lead to total blindness.

The best treatment for this disease is to cleanse the blood thoroughly, get up counter irritation, by bathing under the throat with the corrosive liniment; and use freely of the Cleansing powders.

FISTULA.

A large tendon being connected with muscles, and ligaments is situated upon the top of the shoulders, immediately under the upper part of the shoulder blade, where it acts as a sort of a pad for the bone to rest upon, and thus prevents the friction of pressure against the ribs. The scientific name for it, is the serrates major; but it is better known as the tough "leather or whitleather:" This ligament reaches over and across the back, and by a cartilaginous substance, is joined to the points on the vertibra or back-bone.

There are a great many causes which produce Fistula, among which are a fevered and morbid condition of the blood, in connection with many other mechanical causes, which to enumerate would be of no practical advantage to the reader, as the management of the different diseases is our main object, and our especial desire.

The reader can acquaint himself with the treatment and management of this loathsome disease, by reading with care and attention, the following recipes.

FISTULA
OR POLL EVIL, BEFORE IT BREAKS.

Examine the affected parts carefully with your hand; if you think no matter has accumulated, make a cloth sack large enough to cover the enlargement; fill it with coarse salt, moisten the outside of it thoroughly with Corrosive Liniment: apply the sack thus prepared to the enlargement for

two or three nights. If there is no matter, the enlargement will disappear rapidly under the action of the poultice. If there is matter present, the sooner it is lanced the better, and the same treatment may then be used, as would be required had it broke and discharged without assistance.

In connection with the above treatment, I give a secondary one, which in my practice I have used with marked success in several difficult and doubtful cases; effecting cures, where help seemed imposible.

When the disease first manifests itself, and swelling is perceptible, apply the Corrosive Liniment once a day for three or four days, after cleansing thoroughly with castile soap and soft tepid water: then use freely of the German Ointment; after it has maturated and suppuration has set in, run a seton from the top to the bottom; which can be readily done by the assistance of a long seton needle; wet the seton every other day, with the following Liniment: which can be easily prepared;—

Mandrake Root 2 lbs.; boil slow for 30 minutes; strain; then simmer slow until quite thick; then add 1 oz. Corrosive Sublimate, ½ oz. of Balladonna; shake freely before using. This application to be used until the pipes are all destroyed and have sloughed off and pure blood is seen to run freely; then the rowel may be removed, the parts well cleaned with Castile soap and soft water; when with the German Ointment freely applied, the diseased parts will be readily healed. During the first stages of the disease a free use of the Cleansing powders should be made, to regulate the morbid action of the blood.

CHAPTER III.

GLANDERS.

The next and the most formidable of all the diseases, to which the horse is subject, is Glanders.

It was described by writers fifteen hundred years ago. It was then and now is a loathsome and contagious disease. The most expert Pathologists state that there are about twenty seven different forms in which this disease is said to manifest itself. It has ever been considered to originate from impure blood. A derangement of the Circulatory System; namely, the blood. The foul and morbid matter absorbed by the various tissues, and taken into the blood is absorbed therefrom, by the secretive powers of the liver, and converted into bile, which is conveyed into the duodenum or upper portion of the small intestines, where it unites with chyme, (or partially digested food) completes digestion and separates the mass into refuse matter to be conveyed away by the intestines; and the chyle, a milky substance which is taken up from the intestines by the lacteals and carried into the blood, in which it circulates and is carried to every part of the system, furnishing those elements necessary to sustain a healthy growth of the different parts of the animal. No matter what the external, internal or exciting cause may be, the real direct cause of a large proportion of all acute, and chronic or lingering diseases, are the fruits of bad blood.

The multifarious forms in which diseases manifest themselves, would afford a theme upon which

I might write volumes; but as all the varied forms of disease which depend upon bad blood are cured, or best treated by such medicines as take up from this fluid, and excrete from the system, the noxious elements, it is not of practical importance that I should describe each minutely: but as all blood diseases require for their cure a similar treatment, it is of no practical utility to know just what name to apply to any certain form of diseases, so you know best how to cure it which we will give in the present work.

No disease will run into Glanders which has not to a considerable degree impaired the blood and broken down the constitution; and every disease that does this will run on to glanders. It is proper to state, that the left nostril is the one usually affected with the disease, or even by ulceration of the nostril for two or three years, when ulcers on the membrane of the nose, have appeared, the constitution will be evidently affected. The horse will loose flesh; his belly will be tucked up; his coat will be unthrifty and readily slough off; a slight cough will be heard; the appetite will be impaired; the strength will fail; the discharge from the nose will grow more perulent, discolored, bloody, stinking; the ulcers in the nose will be larger and more numerous; and the air passages being obstructed, a grating, choking noise will be heard at every act of breathing. The lungs are now diseased; they are filled with tubercles or ulcerations, and the horse dies an emanciated and loathsome object.

CATARRH OR COLD.

Catarrh or cold is many times mistaken by the inexperienced, and called glanders. An acute action with fever accompanies cold and loss of appetite and sore throat, (causing quidding of the food, and gulping of the water are sufficient indications of the latter,) the discharge from the nose is profuse, and perhaps purulent: and the glands under the Jaw, if swelled are moveable; and there is a thickening around them; and they are tender and hot. With proper treatment the fever abates; the cough disappears; the swellings under the throat subsides; and the discharge from the nose gradually ceases, or if it remains it is usually very different from that which characterizes glanders.

AN INDIAN CURE FOR GLANDERS.

1 qt. of cider vinegar; 4 oz. honey; 2 oz. golden seal; 1 oz. Elecampane; and a piece of rock alum the size of a hens egg; all pulverized and stewed 15 minutes; take off and add $\frac{1}{2}$ pint lard. Give your horse 4 spoonsfull in each nostril with a little horn, once a day for three days, holding the horses head in such a position, that the contents will pass into the stomach. I have proven this to be good in cases of Strangles, Catarrh, Nasal gleet, and distemper. All diseases of the glands are best treated and cured by Alteratives, or such medicines as purify the blood, illiminates the morbid matter from the system, and carry off the disease.

A GOOD ALTERATIVE.

4 oz. of Jimson seed pulverized; 4 oz. oak bark powdered; mix these powders with as much vinegar and flour as will make a stiff dough; work them well and give one the size of a walnut each day greased so it will slip down with ease.

A GERMAN CURE FOR GLANDERS, DISTEMPER, SORE THROAT, STRANGLES, SURFEIT, HIDE BOUND, MANGE OR GREASE-HEEL.

Take annis seed, cummin seed, fenigreek seed, fine powder of elecompane roots; of each 2 oz. add 2 oz. of brown sugar; 2 oz. flour brimstone; 1 oz. licorice ball; dissolve it on the fire in ½ pint of white wine; when done take 1 oz. of oil of annis, and 3 oz. colts foot, then take lard, oil, pure honey, sugar, molasses, of each half a pint; mix the above in wheat flour, using enough to make a stiff dough; place it in a hogs bladder and tie tight and put it in a Jelly pot. They will last a year.

The manner of useing is this; make them into balls, the size of a walnut; as you desire to use them; grease well and give one each day.

Strangles are peculiar to young horses. The early stages resemble common colds, with some degree of fever and sore throat, generally with distressing cough, or at least frequent wheezing; and when an enlargement appears beneath the jaws, it is not a single small gland; but a swelling of the whole of the substance between the jaws, growing harder towards the middle, and after a while appearing to contain a fluid which breaks, and inflames the membrane of the nose, until the same be-

come intensely red. The discharges from the nose are purulent or mixed with matter, almost from the first; and when the tumor has bursted; the fever will abate and the horse will speedily recover.

TREATMENT FOR STAGGERS.

Poultice the throat well with a draught made of flax seed meal and sprinkle well with ground mustard. The nostrils should be well steamed with a decoction made of vinegar, tobacco and mustard, boiled in a quart of oats; and put in a sack and tied to the horses head-stall. Renew your poultice till the swelling becomes soft; then lance; be careful to feed boiled oats or bran; adding a sufficient quantity of Cleansing Powder to regulate the System.

COLIC.

Colic, in general,is a severe pain in the bowels, of which there are several varieties; as, Spasmodic Colic, Flatulent Colic, Billious Colic, and many others. The two first of which are the most prevalent among horses. They therefore demand our special attention. To be able to treat either of which successfully, one must needs be thoroughly acquainted with its causes, symptoms, and remedies. We take up the subject of Spasmodic Colic, first, for it is more fatal in its results and of greater prevalency among horses than any other species of this disease. It is characterized by sudden and violent spasms. The animal appears to suffer the most extreme pain; paws and stamps violently, shifts his position almost continually, biting his

breast and flanks, and assuming almost every position imaginable, will lie down, roll over on his back, get up and frequently turn round once or twice, and looking sorrowfully and wistfully at his flank. The spasms usually last from fifteen to twenty minutes, after which time the horse will rest easy and apparently comfortable. But this is of short duration, and if relief is not immediately given, the poor animal will be subjected to the same violent fits and spasms as before, but with increased streneth and severity.

The common causes are application of cold water to the body while in a heated condition, drinking too much water while the blood is heated, and the stomach in a warm or feverish state, produced by unwholesome feed, or over feeding. With the following treatment I have met with marked success. In the first stages of the disease, throw a handful or two of Salt down the horse's throat. If this does not give relief within fifteen minutes, give the following drench: 1 oz. Tincture Opium, 1 oz. Sulphuric Ether: 1 oz. Tincture Camphor; ½ pint warm water. If not better in thirty minutes, repeat. If it should become necessary, and the nervous system can not be relaxed by the above treatment, bleed freely from the neck vein, back rake the rectum, and give warm soap-suds and tobacco clysters.

FLATULENT COLIC.

This is produced by an accumulation of gass in the stomach and small intestines, causing the stomach and belly to swell and extend, and the rectum to protrude. When the swelling becomes great,

relief must be given immediately, or sure death will be the result. Relief at this stage of the disease is best given by raking, and the use of soap-suds and tobacco clysters. The following compound will be found good in all varieties of colic.

2 oz. gum Catecue; 4 oz. gum Camphor; 4 oz. gum Asafoetida; 2 oz. gum Opium; 1 pint sweet spirits Nitre; ½ pint spirits Amonia; ½ pint Sulphate of Ether. Bottle well and set aside for several days. Dose—1 oz. in ½ pint of warm milk or cider. Repeat every 30 minutes till relieved.

I might add here that this compound is also excellent in lung fever. A thimble full put on the tongue, once in two or three hours in connection with the treatment given for this disease in other parts of this work, will be found of great value.

DISEASES OF THE LIVER, OR YELLOW WATER.

In either case, the billiary or hepatic duct becomes obstructed from too frequent use of unwholesome feed or from noxious or impure air, causing the eyes and the mouth to turn yellow; the hair and mane to become loose, and drop out.

At this stage of the disease the horse is often lame in the right shoulder, and usually costive.

Give the following ball every morning, until it operates upon the bowels: 7 drachms Alloes, and 1 drachm Calomel, 4 drachms of Ginger, and molasses enough to make it into a ball; wrap it in paper and give it. Give scalded bran and oats; grass, if it can be got. When the bowels have moved, stop the physic, and give one ounce spirits Camphor in a pint of water every morning for

twelve days. Rowel in the breast, and give a few doses of the Cleansing Powders.

LUNG FEVER.

Symptoms.—The horse is taken with a chill or shivering fit, stands back at the end of the halter, breathes very hard, and never offers to lie down; the lungs have a grating harsh sound.

This is a science in horse doctoring, of which but little is known, but easily understood. If you suspect your horse of having lung fever, the fact can be known with certainty by holding your ear close and low, behind the shoulder. If he is so attacked, (acute) you will hear a heavy throbbing of the pulse, with a grating sound, resembling the rasping of nails when a horse is being shod; his ears, legs and sheath are cold, and he stands with his legs wide apart to expand the lungs, the fever causing inflammation, so as to render it difficult to inhale the air.

The anatomy of the horse, shows that the blood flows to the heart from all parts of the body, it is immediately forced out into vessels or arteries dividing a branch, which accompanies the windpipe on one side, the other branch passing to the other division of the windpipe. As often as the windpipe divides, the blood vessels accompaning it divide in like manner, 'till at last minute divisions of the blood vessels reach the air cells, when they pour their contents into the capillaries. The air cells are filled upon the principle, that gravitation causes air to rush into any cavity, hence, it is the pulse acting as a valve in its perpetual motion, that equalizes the temperature, by a regular fresh ins-

pirations of air, which owing to the inflamed condition of the cells, cannot enter, thus the heated blood brings on fever.

Treatment while in the chill state.—Cover with a blanket, and rub the legs well. After the fever has set in, control the action of the pulse by giving ½ oz. Tincture of Lobelia as often as may be required. If it gets bad, you will have to bleed in the neck vein and blister behind the fore leg. Be careful to keep the pulse near its natural state. Do not give any powerful physic. I would also recommend on first appearance of fever, a large handful of salt in a quart of water as a drench, and in twenty minutes, treat and give the medicine as directed. After rubbing the legs thoroughly with salt and hot water for ten minutes, to cause circulation of the blood, it would be well to bandage the legs well with hay ropes wet in warm vinegar, all the way down from top to bottom Give no corn or dry feed. Grass or bran mash is best. If the fever lingers any length of time, give 3 drops of Aquenite, and 15 drops of Jesomine, in 1 oz. of water every three hours. With the above treatment I have cured hundreds of cases. Give your horse fresh cool air to breathe.

PLEURISY.

When the lungs partake of inflamatory action it is termed Pleuro Pneumonia. There is so much sympathy of the parts, that they are to a greater or less extent involved. The attack may be sudden or gradual; the horse will show indisposition for many days before the attack. A hard drive; overheating; being exposed to the cold; bathing in

cold water, when the horse is in a state of perspiration; or any thing that will cause respiration to disappear. The horse will be dull and stupid for a day or two; not wanting to lie down; pulse not much disturbed; will grunt or groan in moving on account of the pleuro of the lungs, and by the rubbing of the sides, as the disease increases the fever increases, and the nose becomes of a deeper red, and so on till the horse is relieved. Blanket well; put him in a warm and comfortable stall; all the while keeping the air pure; rub strong stimulative liniment on the legs; and also on the body and on the breast. This is a good and sufficient liniment: composed of Aqua Amonia with ½ water; or if this cannot be procured, use any good liniment, or apply mustard three or four times a day. Give 15 or 20 drops of Aconite and Veratrum as used for inflammation of the lungs: keep up an irritation on the legs and body; repeat the medicine; give internally every 20 or 30 minutes until relief is afforded, lessening or increasing the dose in quantity and frequency according to the severity of the case; feed light for some time; give him mashes, and give him crude Antimony and Sulphur, as in the treatment for inflammation of the lungs.

PNEUMONIA, OR INFLAMMATION OF THE LUNGS.

An inflammatory or high condition of the lungs, is caused by high feeding, keeping in close and badly ventilated stables; then subjected to violent exercise, or sudden changes from heat to

cold being applied to the external surface of a heated animal by which the blood is driven from the skin and extremeties to the internal organs.

The disease is usually noticeable, first, by the horse having a severe fit; he refuses his feed; hangs his head between his fore legs, or upon the manger; and will not move or lie down; the breathing is quick and weak, scarcely preceptible; legs, ears, and muzzle cold. If the attack is sudden, coming on after violent exertion and the pulse is quick, weak or scarcely perceptible, and if by putting the ear to the side, no sound is discovered, the disease is termed congestive pneumonia.

This disease requires speedy treatment. When inflammation sets in, clothe warmly, and treat as for Pleurisy, applying counter irritants to the breast, sides and legs; and give the following mixture: 4 oz. water; ½ oz. tinct. Veratum Viride; ¼ oz. Aconite; (mather tinct.) Dose.—from 15 to 30 drops on the tongue in from 20 to 30 minutes, according to severity of the case, until relieved; also a few swallows of water should be given. If the horse will drink, the medicine may be given in water. He is improving if the pulse is full and regular and his actions are lively. Oil or physic of any sort must not be given, as there is so much disposition to sympathy that any irritation excited by physicing, would aggravate the disease, or cause inflammation of the bowels and death. Injections are admissable. Diet must be low, for some time, using a small quantity of bran mash, or a few potatoes, carrots or grass; no oats or corn and but little hay. Give bran mash daily for two weeks in which a table spoonful of the following mixture should be put, for the purpose of preven-

ting dropsy of the chest: 3 oz. sulphur, 4 oz. Nitrate Potassa(Salt Peter) 1 oz. crude Antimony.

A WANT OF CONDITION.

The connection between the skin and a healthy state of the horse generally, and particularly the proper discharge of the digestive functions, is much closer than horsemen seem at all times to imagine. A soft, loose, mellow coat, easily raised from the muscular substance beneath, and the hair either curling naturally, or lying smooth, and presenting a glossy appearance, are considered in cattle, as indications of health, and a disposition to thrive; and in horses they are proofs of condition and capability to work: but the connection between these things and the stomach, is too much overlooked. Condition in a carriage horse, the racer, and the cart horse, are very different things; but they all agree in the particulars above mentioned; they all exhibit the same soft, elastic state of the skin, and the same glossy smoothness of the hair.

The skin is pierced by innumerable pores, through some of which exudes an unctious matter that gives the peculiar softness and healthy skin. If there is any mismanagement in the feeding; if proper cleaning, clothing, or exercise is neglected or improperly managed, the evil effects will soon be manifest by the want of pliency and elasticity of the skin, and the accumulation of scurfy matter upon it, and by the roughness of the hair.

Bad water, mow-burnt hay, musty oats, or foul air, are frequent causes. Diabetes, or profuse stalling is often brought on, causing the vagina in

mares and cows to distend and dilate, or the Farciman to swell down both hind legs and along the belly; and also a secretion of milk before foaling or calving: garget is a disease of the udder.

By these means the condition of the animal becomes greatly reduced. It is requisite, therefore, to inquire whether any of these errors are in existence, and if so to remove them. A sudden cold often brings on a want of condition. Worms form another cause of morbid condition. In case of either, the cure must be directed in accordance with the cause. Excessive fatigue is also productive of a bad condition, which often proves obstinate.

The first thing indicated in the treatment of a want of condition, unless it can be traced directly to some one of the above causes, is a mild dose of physic. A second or third dose may be necessary, if the case proves obstinate, but otherwise, alterative and tonic medicines, given for a short time, with proper attention to diet, clothing and exercise, will be all that will be necessary. Turning to grass is among the best remedies.

STONE OR GRAVEL IN THE BLADDER.

Fortunately the stone is a disease not very common amongst horses; but whenever it makes its appearance, unless some remedy is immediately employed, its consequences are to be much dreaded. It consists in small gravel or stones being lodged in the bladder, which prevents a free discharge of the urine, and produces the most excruciating pain. The horse will linger and pine away, until he can scarcely support the burden of life.

As the stone is a disease which has but seldom

if ever, struck the attention of farriers, I consider myself fortunate in being able to offer to the public a simple remedy, which has been employed with astonishing success by a gentleman in a neighboring county. In one case, when the following remedy was used, three stones and a quantity of grit was discharged from the bladder.

The spasms of the Ureta are the great difficulty. I have a case which I am treating while I am writing this article, which was of long standing which I restored with abundant success, by means of the following remedy. ½ oz. Tincture Lobelia, ½ oz. Tincture Opium, ½ oz. sweet spirits Nitre; in ½ pint warm water. Drench; if not better in an hour, repeat; and make a bran mash; add 2 oz. water melon seeds, 2 oz. pumpkin seeds; feed twice and give Charm No. 7 as directed.

FOUL SHEATH.

Most horse owners pay too little attention to the animals sheath, a neglect of which often results in colic, inflammation of the parts which extend to the bowels, and other serious consequences. When first the sheath becomes foul, the horse runs down in flesh, and frequently gets so low as to be on the "lift". The complaint and its results are so frequent, that within a short period I have been called upon to prescribe in at least fifty cases of the kind. By examination of the sheath you will find it swollen and feverish. The proper mode of procedure is, to draw out the penis, having your hands greased rub as much of the foul matter off as you can, still applying the grease. In the point of the penis is frequently found a "bean" a hard substance formed

by an accumulation of filth, which is sometimes difficult to remove; it must, however be picked out.

When this is accomplished, after removing all the filthy matter possible, wash the parts with a soft rag, soap and water, finally greasing with hogs lard, well salted and fried in Bittersweet. The operation may have to be repeated two or three times. A few doses of Cleansing Powders should be given.

BLIND STAGGERS.

The term "Blind Staggers" indicates the two principle effects of the disease, and points out its true causes and symptoms. Hence we need do no more than name the disease, in order that it may be known. We therefore go at once to the

TREATMENT.

Bleed in the neck until the horse is somewhat relieved, then give a dose of physic. Give him bran mash to eat, in which put daily a double handful of green Rue. This will enliven him, prevent worms, gross humors, and will purify the blood. Make free use of the Cleansing Powders.

DISTEMPER.

Is brought on by a morbid state of the system, usually engendered by exposure and want of care.

It manifests itself first by a swelling or tumor under the Jaw, and by profuse discharges from the nose. This swelling gradually increases in size and hardness until it renders the animal unable to

eat. At this stage of the disease relief must be afforded as soon as possible, or it will result fatally.

Lance the tumor as soon as suppuration sets in and matter can be detected. If it should remain hard and be slow in ripening, apply a poultice of common brown sugar and bar soap. Give him the Cleansing Powders for ten or twelve days. Turn him out if you can on pasture.

NASAL GLEET, OR NOSE DISCHARGE.

The cause of this is neglect in distemper, or over heat or cold. This is a white discharge; is not contagious, and can be cured.

Take Alum ½ lb. ½ lb. Rosin; 1 oz. Blue Vitriol. Grind and mix well with ½ lb. Ginger. Give one large spoon full every night and morning. Make a wash of Privy leaves and Sage leaves; steep 15 minutes, strain, then add 1 oz. Golden Seal, with which swab the horse's nostrils twice a day until cured. Make free use of the Cleansing Powders. Keep him out of the wet, and do not work him.

BUTTEN FARCY.

Cause.—Over heat, high feeding, and want of exercise.

Symptoms.—The limbs swell and break out in running sores. This is a blood disease and you must depend more on cleansing the blood with the Cleansing Powder, and use the Healing Wash for old sores, applying two or three times per day after washing clean. Be careful not to get the matter on a wound, or on your hand *or it will vaccinate you.*

WATER FARCY,

Is a swelling under the belly, and forward to the breast. Rowel in the breast, and along the swelling. Apply the Healing Wash for old sores to the swelling. Move the Rowel every day, and let it stay in until the swelling goes down. Give soft food–mashes with the Cleasing Powders in them.

MANGE,

Is a cutaneous disease, appearing in small watery blisters on the skin, accompanied with an uneasiness or irritation that causes the animal to rub itself constantly. There is a difference of opinion among authors, as to the cause of this disease. Some attribute it to a small insect, that may be found by means of a microscope, in the vesicles, others to a morbid state of the blood, generated by unwholesome food, or by want of proper care, or standing in unclean and imperfectly ventilated stables. The disease is taken only by contact or contagion.

TREATMENT.

Wash the horse thoroughly with Castile soap and water, then take a pint of the Jimson Ointment, add ½ oz. Red Percipitate and apply it to the affected parts. Give daily of the Cleansing Powders. This will never fail to effect a permanent cure.

SURFEIT,

Is caused by over eating and drinking, and want of sufficient exercise, and at times, by over fatigue,

or sudden transition from heat to cold. By means of which the system becomes surcharged with morbid matter which makes its appearance in the skin, causing it to become scaly and scurvy. Treatment should be the same as is given for want of condition.

MARGINS, OR DUMBNESS IN HORSES.

This disease makes its appearance in different forms. Frequently it is noticed by his dullness in driving, and inclination to leave the road, or bear upon one rein, and inclined to sleep while standing; and, again, he appears to have lost all feeling; pays no attention to the whip, and will go to sleep with his mouth full of feed. In other instances the horse is taken with jerking of the head up, and will run back and fall down, lie a few minutes, and get up again. This is called by some, fits, but it is the same disease in another form, caused frequently by high feeding and want of exercise, causing too large quantities of blood to pass to the brain. It is supposed by some to be dropsy of the brain, but this is not the fact. Cure doubtful in all cases.

Treatment for the dumb horse; bleed and physic; give regular exercise and keep in a cool stable. Reduce his flesh by taking strong feed from him and give him fodder or blades of corn. Give ½ oz. Tincture of Assofœdita every day for one week, and then tie the gum upon the bits and wear it on them all the time. The same is proper in all forms of the disease. They call it sun stroke. It is wrong to keep horses in hot stables without being well ventilated. The stable should be kept clean, and

lime applied every twelve days. The ammonia arising from the filthy stable is bad for this and all other diseases, and hard on the eyes.

HEAVES OR THUMPS.

The subject of Heaves or Thumps in horses has engaged the attention of many of the best Veterinary Surgeons in England and America, without being able to arrive at any conclusion as to its cause, or a remedy for its cure.

From my experience I am satisfied, that what is termed heaves or thumps, is nothing less than heart disease of a milder type. The disease is not directly in the heart, but in the Pulmonary artery, causing an obstruction of the blood from the ventricle of the heart. The Pulmonary artery, like every other in the body, is composed of three distinct coatings—the outer, Peritoneal; the middle, or muscular; and the inner, or serous. Its walls are very elastic and flexible when in their natural state, and expand to some extent, at every pulsation. But it so happens that they sometimes become grown together and hardened, in which condition they do not admit the flow of blood so freely as before. Ordinarily no disturbance is noticable from this change in the coatings of the artery. The duct still appears to be sufficiently large for the passage of the blood, until the horse is severely exercised, or otherwise excited; and then the blood courses through its chaunels with such rapidity that the diminished capacity of the pulmonary artery is found to be a serious trouble. The vessel does not respond to the growing demands upon the heart. The blood now begins to accumulate in the heart com-

pelling that organ to put on extra labor to urge it forward through the unyielding artery; and this labored action of the heart often becomes so great that the outer arterial channels sympathize, with it, and a general throbbing of the internal viscera is the consequence- This throbbing may be plainly seen upon the sides and flanks, and hence the appropriate, though homely name, thumps.

TREATMENT.–The best temporary relief, frequently lasting for years, will be given the animal thus affected, by giving a large handful of salt in about eight quarts of cool spring water. Bleeding will also give relief, by lessening the flow of blood, but it should not be adopted unless in extreme cases, and then only as a last resort. I give the German cure, as follows, which I find in my practice to be the most efficient, having cured numerous cases, some of which were in the last stages- Take one qt. unslacked lime, slack it in two gallons of soft water, settle and strain off; then add 1 gal. Smith's Forge water, 3 oz. oil of Vitriol, mix Give two oz. of this daily in chop feed.

In this disease all feed should be wet and care taken not to feed mow-burnt hay or any feed which is tainted, as this is the originating cause of the disease.

To cure heaves or to give temporary relief take oil of Tar 1 oz., oil of Amber 1 oz., Balsam-capænia 1 oz.; mix and give 15 or 20 drops in feed daily.

INFLAMATION OF THE BOWELLS.

Symptoms very much like colic, followed by purging, proceeding, too often, from over doses of physic being administered, or from acid generated

in the bowels by food. In addition to the purging, constant pain attends this disease, which is indicated by the animal frequently looking around to his flank, heaviness in his breathing, a quick feble pulse, hot mouth, ears and legs. The horse will be much tucked up in the flank; by pressing against the bowels with the hand, he will flinch, the nostril will be almost a scarlet red, the tongue purple in the centre, and red on the edges. Large quantities of water when overheated; sudden change from warm to cold atmosphere; plunging the horse when hot into cold water, are the principal causes. High fed horses are most subject to this disease.

TREATMENT.—Take 1 oz. of Calomel and make it into four pills. Give one every two hours. In two hours after you have given the last pill, give 1 qt. of Linseed-oil. In the mean time, if the horse is in pain, give him ½ oz. Tincture-Opium, and repeat if necessary.

WORMS.

There are three kinds of worms which affect the horse. The first and most troublesome are the large white worm which resembles the common earth worm, and is from six to ten inches long. These are found principally in the small intestines. A strong dose of physic will often expell great numbers of them when the horse is apparently in good health. The Tape-worm is not common in the horse; sometimes, however, they exist. The Thread or Needle worm are the smallest and are of a darker color. These are found in the large intestines, and frequently in great numbers in the Rec-

tum, where they cause much uneasiness. The symptoms by which the existence of worms are discovered are a tight skin, a rough coat, an irregular appetite, tucked-up belly, also a yellow mucus under the tail. CURE:—Barbadoes Alloes, 1 tablespoonful; boiling water, ½ pint. When the alloes are dissolved, add Linseed 1 qt.; shake well together, and after sweetening well, inject twice a week, as long as any worms are discharged with the injection. To use internally the cleansing powders, mixed with hickory ashes, or corn-cob ashes about one half in bulk, has been known to expel great quantities of them.

BOTTS.

Many recipes are laid down in this book, most of which will free a horse from Botts, if not too far spent. The signs are, they will be knotted under the upper lip, and when those knots appear to have yellow heads, they are far gone, and can only be cured by powerful remedies; but when he sweats and his breath is strong and hot, there is a doubt of his ever being cured. They will likewise, if not very bad, often strike their hind feet against their belly, show signs of colic, lie down and stretch, get up hastily, and feed greedily. The cure is, first bleed him plentifully in the mouth, that he may swallow a large quantity of the blood, or for want of it, drench with 3 pt's of milk well sweetened with molasses, blood warm. Let him stand near an hour that the Botts may loose their hold, by filling themselves with blood, or milk and molasses; then take one pt. of Linseed oil: give him one half and remainder next morning. It is found by experi-

ment that this oil is a deadly enemy to the Bott, killing them in an instant. It has been tried by other common oils, but the effect is not so quick, yet most oils destroy them of a certain texture, With this treatment you need not lose any creature with this disease, and your horse will afterwards thrive exceedingly well. It is well to give it once or twice a year, especially in the spring just before he goes to pasture. The decoction of Savin, dissolved in Nitre and well sweetened with honey, is a good recipe for Botts. Savin and hickory ashes mixed with their food, will both prevent their breeding and destroy them.

ROARING,

Usually accompanies or preceeds broken wind; and is one of the results of Pneumonia. It is not an affection of the lungs as is usually supposed, but is the result of congealed blood lodged in the Windpipe which obstructs the free passage of the air to the lungs and renders the breathing heavy and labored, causing a roaring and wheezing sound that at times can be heard a quarter of a mile or more. The roaring is invariably brought on by hard work, or by any excitement that will heat the blood. The disease should be treated in the first stages, for after it has become thoroughly developed cure is doubtful, and we might add, with truth, impossible. But in all cases, relief can be afforded by applying counter-irritants to the throat. The disease taken in its first stages can be cured by the use of the German cure, as given for glanders. The animal should have the best of care and attention.

BROKEN WIND.

The causes of this disease are not well understood. It sometimes makes its appearance after a severe attack of Lung Fever. It is also produced, at times, by severe labor immediately after eating, while the stomach is full. The principle of which is this: A heavy load upon the breast of the animal while the stomach is full, causes the breast to contract and cramps the lungs, and while in this cramded and compiessed condition, ruptures of the cells occasionally take place, which become permanent, and are the legitimate cause of the wheezing. we might give other causes, but it would be of no practical utility; hence we proceed at once to the

Treatment.—Feed light; Bran Mash is the best; in which put from 15 to 20 drops of the following mixture in each feed daily until consumed: Spirits of Turpentine, Balsam Copævia, Tincture of Capsicum, oil of Tar, equal parts, and mix.

This mixture is also good for all cases of cough, acute or chronic.

TETANUS, OR LOCK JAW,

Is produced by an affection of the Nervous System, which is generally brought on by the injury of some small nerve, produced by a bruise, and sometimes by the nerves being torn or lacerated. Injury to the nerves of the foot, produced by bad and unskillful shoeing, and sometimes by fast driving over rough roads, may be considered the chief and principle source of this dreadful maledy. Lock Jaw is not the necessary result or inevitable consequence of bruised or conrused nerves; but

this in connection with gross neglect and undue exposure to cold and bad weather, will at times produce it, especially if the horse's blood is in a diseased and unhealthy state, and the system not in proper tone and condition.

This disease affects the organism of the horse; all the muscles become rigid and contracted, thereby producing extreme nervous derangements, and the most violent spasms. And as the muscles and tendons become contracted, the skin tightens, the joints become stiff, the breathing labored, until finally the powers of motion cease and the poor victim falls lifeless to the ground.

There is no reliable remedy for this malady. After it is thoroughly developed, all hope of recovery may be abandoned, for then it is that relief cannot be given.

The fatality of this disease is attributed not so much to bad treatment or want of proper care and management as it is to actual starvation, promoted by the fixedness of the jaws, which render the animal unable to eat.

Treatment:—In the last stages of this disease all treatment is vain and useless; but by proper care and management before the disease becomes fully developed, it may be checked and its dreadful results prevented. The prime object in the treatment of all diseases, is to relieve the affected parts, and to remove the cause, and as the nervous system is toned up to its highest tension in this disease, it is to this that we must look and procure if possible a recation of the same. This can be done by bleeding freely from the neck vein. This has been proven to be the most reliable treatment for this complaint; for by a depletion of the blood,

the nerves and muscles are relaxed, and a healthy and natural action of the various organs of the system is procured. The blood should be allowed to flow as long as the horse can bear it. Close attention should be given to the action of the pulse, when it becomes low and feeble and its strokes slow and irregular, the blood should be checked until it (the pulse) resumes its natural measured strokes and tone. When, if the jaws and muscles have not relaxed, the blood may be let to run for the same length of time. This repeated for a few times, will by degrees, produce the effect desired. The bleeding should be checked before the vital energies of the horse become overpowered and his strength fails him.

After a sufficient quantity of blood has been extracted, Opiates should be used to quiet and tranquilize the nervous system.

Give from one half to a gill of laudanum every six or eight hours till the nerves become quiet and the horse rests easy. During which time salts should be given in sufficient quantities to produce an operation of the bowels. In this disease an evacuation of the bowels is very necessary, and should be procured as soon as possible. Use injections of corn meal and flour gruel every four to six hours. A quart at each injection will be sufficient. This relaxes the bowels and gives nourishment to the animal.

As soon as your horse is able to eat, give him bran, mash or any soft feed that is easy to masticate and will not heat the system. Keep him well blanketed; apply warm fomentations to the neck every six or eight hours, until you have secured a free perspiration when you may hope for recovery.

Too free use of this mode of treatment should not be used.

A horse in a sound and healthy condition should never be bled.

It doubtless greatly diminishes the longevity of the animal, and weakens in a great measure his constitution, impairing his vital energies and rendering him more susceptible to colds and all kinds of contagions.

The curative process in all deseases is to be carried on through the medium of the blood; for it is through the means of the blood that disease is illiminated and the system recuperated; hence to extract from the system that medium through which cure is affected and the system built up, is to any sober and thinking man unreasonable and by such never practiced except in extreme cases when the veins become engorged and speedy relief absolutely necessary. But when time can be taken for the cleansing and purifyingof the blood, bleeding should not be practiced. Make use of such remedies as will purify and cleanse the blood, and you at once remove the destructive and disaffecting elements. Disease is not removed by bleeding; for the destructive agent still remains in the blood unextracted. Any good altterative will accomplish this purpose and renovate and make new, as it were, the entire system. Never make use of the killing practice of bleeding, when the same end can be obtained by other and more reliable remedies.

The diseases which have been heretofore treated by bleeding, you will find treated of in other parts of this work and the proper remedies therefor given.

HEMORRAGE,

Or bleeding at the nose is usually the result of an injury, and at times proves fatal. For which I confidentially recommend the following

TREATMENT:—Take two small hemp cords and tie them very tight just beneath the elbows of your horse's fore legs; this in a measure, will stop the circulation of the blood; then lay cloths wet in cold or ice water on the nape of his neck, which wet frequently; this in mild cases will be sufficient.

When the bleeding is profuse, I would recommend either or both of the following:

1st. Burn three or four linen rags on a pan; let the animal inhale the smoke. Pulverize the burnt rags, and blow the ashes up the nostrils.

2d. Take 2 drams of Sub-sulphate of Iron; 2 drams of Tannic Acid; 2 oz. water; and shake well, and apply to the bleeding parts.

Either of the last two remedies are excellent for a bleeding wound.

SWEENY.

Its real cause is produced by a slip shoulder or by the tearing of the Periostreal membrane from the Scapula. This disease effects more or less both the bone and the muscles in that region; but at times, only the one appears to be effected primarily, while the other is only effected through sympathy. But when the bone is more or less affected, the membranes surrounding are always in a diseased and inflamed condition, extending from the shoulder, to the foot, which is one of the principle causes of foot-rot, and many other foot diseas-

es. When this disease becomes deep seated, and of long standing, it is always certain to produce diseases of the feet, usually foot-rot.

TREATMNT:—Inflate the shoulder well. This can easily be done by means of a small blow pipe, by first making a small incission through the two first membranes of the skin. Get up a strong counter-irritation. The inflammation should be dispelled and scattered as soon as possible.

No better remedy can be offered than the corrosive Liniment, and none that can be used with more ease and safety, an application once a day for three or four days is sufficient to scatter the inflammation; after which the German cure, No. 1 should be used, which is an excellent restorative and one that has long since proved itself, reliably in this lingering disease, which we here give, German Charm Cure No. 1.

Take rusty bacon cut it small, and render the fat out, then add two tea-cups full of fine salt, and three fresh eggs, to half a pint of lard; stir it well until it is cold, and with this salve annoint the affected parts on the third, fifth and seventh days after the new moon, it is a certain cure,

ANOTHER FOR THE SAME:—If your beast has the Sweeny, rise the first Friday in the new moon, and perform this cure speechless before sunrise: take a sharp knife and cut a small bit of skin from the affected part, so that it may bleed, and put the skin with the blood into a small blank paper, then with an auger, bore a hole on the east side into an apple tree, put in the paper with some blood and drive a pin upon it in three strokes, this you will find to be the most certain cure.

INFLAMMATION, OR SWEENY OF THE HIP.

This disease is not so frequent as the corresponding disease in the shoulder, but is more easily handled. It is characterized by the same symptoms; is as readily distinguished; and is produced by the same causes.

TREATMENT:—The same treatment as for Sweeny in the shoulder should be used, omitting the process of inflation. The same remedies that are given for Sweeny on preceeding pages, will be found the most reliable that can be used; either for dislocation of hip joint, for big shoulder, or in the case of hip being knocked down, in all of which cases an entire or partial cure is insured, by which treatment and special care the horse may again be rendered useful in many departments of labor.

STIFLE SPRAIN.

We use the expression Stifle Sprain, from the fact that a dislocation of the stifle joint, is of rare occurrance, indeed if it ever takes place. Should it occur, it is very doubtful if the horse would ever be able to walk again. The stifle, is however subject to sprains, and is sometimes so badly injured, as to produce swelling; inflamation, and lameness of the most hopless character; causing the horse to hold up his foot. He will tremble when moved and at times give indications of the most intense pain. This however occurs only in extreme cases; it is usually not much complicated and easily handled.

TREATMENT:—Foment the stifle with warm water, and rub dry. Then apply the Nerve and Bone Lin-

iment every five hours, give bran mashes or some mild physic. Never allow any stifle shoe or cord to be placed on the foot or leg.

BIG SHOULDER.

This is properly Sweeny, and should be so termed. Its name is derived from the swelled and aggravated condition of the joint. It is accompanied with all the symptoms and peculiarities; the same loss of flesh; the same lameness; the same inflamed appearance, as is peculiar to Sweeny, but of a more aggravated character. The enlargement is produced by a diseased and unnatural growth of the scapula; to which the prime cause of disfigurements and lameness may be attributed.

Hip knocked down or Dislocation of hip. The hip joint affords the best type of the ball and socket to be found in the structure of the horse. And this, in connection with the firm cartilages that encase the bones on every side; and supported as they are by strong and powerful ligaments; render a dislocation of the same, very difficult; rarely occurring except by sudden wrenching motions; whereby the head of the Femur is wrenched from the socket. As it takes great violence and powerful agents to produce a dislocation of the hip, so does it take great skill and care to replace and treat the same. The head of the Femur being hard to replace and the horse diffcult to manage, renders it a particular and doubtful case to handle. The horse should be kept quiet, if bad weather, kept in the dry; keep on low diet and make free use of the cleansing powders, for the blood should be kept in a healthy condition.

ENLARGED OR CAPPED HOCK AND HAUNCHES.

The cause of the enlargement of these parts is generally that of a bruise; or some serious injury to the joint. The enlargement is usually filled with a thin transparent fluid called Serum. This fluid should be drawn from the swelling, as soon as (it) the swelling becomes soft and susceptible of impression to the hand.

This is best done by running a seton through the lower edge, for the entire contents of the enlargement may be extracted. After which strong counter irritants should be used. Among the best is Corrosive Liniment. Nerve and Bone Liniment and stifle Liniment, either of which thoroughly applied and well rubbed in once a day, for three or four days will usually be sufficient. To reduce the swelling use from four to six applications of the Jimson Ointment daily, keep well in mind the condition of the horse, and give if necessary freely of the cleansing Powders.

INSTRUCTIONS ON SPAVIN, RING-BONE, SPLINT, CURB, THOROWPIN, BOG AND BLOOD SPAVIN.

In the treatment of any of the above named diseases it is proper to exercise a good judgment in ascertaining the length of time it has been standing, and whether it is ossified bone, or merely cartilaginous swelling that arises from a burise, sprain, or the breaking of the periosteum that forms over the bone. These sprains which break the periosteum on the bone cause great fever in these parts

a pound of remedy. Hence, below I will give the receipes which have cured all stages by their combined treatment; and in the science of medicine we challenge the world to equal them.

Take of Cantharides, 2 oz; Mercurial Ointment, 4 oz; corrosive Sublimate, ¼ oz; Euphorbium, 2 oz: Croton oil, 1 dram; Camphor Gum, ½ oz. Take 2 lbs. lard, Mutton tallow, ½ lb; melt over a slow fire until dissolved, then add the above after removing from the fire; be careful to stand where you cannot enhale the air arising from the mixture when stirring. Stir and mix well until all is cold; then put it in a glass jar, secure tight. If any case has been of long standing, rub on more freely of the ointment; any recent case, a less quantity will answer. Apply enough to merely grease the parts, rub in well with the hand; in twelve hours squeeze the parts, repeat the squeezing every four or six hours in twenty-four hours; wash off clean with soft water soap-suds and salt; if it is freezing weather bind up the part with something to keep cold out until it gets dry; then apply the corrosive Liniment—merely enough to moisten the parts. This Liniment has great power in restoring all sprains and bone diseases, from the fact that it ossifies on the bone, filling up the small pores in the bone.

To make the corrosive Liniment, take 1 pint of Turpentine; 1 oz. Camphor Gum; 1 oz, Tincture of Iodine; 2 oz. Stone oil; 1 oz. of finely pulverized corrosive Sublimate; Cork in a bottle; in twenty-four hours it is fit for use. Every time after applying the Liniment, use the salve to

strengthen the parts and keep down fever. To make the salve to be used after the Liniment, take a large handful of what is called Bitter-sweet or Sarsaparilla; 2 lbs. of Lard; 1 lb. Mutton Tallow; 2 oz. pulverized Jimson seed; wash the roots clean and bruise under the hammer, then fry the roots and seed for fifteen minutes over a slow fire; then throw out the roots, and add to the above ½ oz, Tincture Iodine; ½ oz. Camphor Gum; ½ oz. Beeswax; ½ oz. Turpentine; stir well until all is cool. This is one of the best salves ever made for any purpose. It is good for all collar bruises, old sores of any kind, and should be kept on hand by all farmers. This is a sure healing salve for Fistulas and Poll-Evil after the pipes are distroyed; and we have healed some of the largest sores and cavities with this salve, after removing warts, you ever saw

FOUNDER IN THE FIRST STAGES.

The horse is stiff, his feet hot and often trembles, and is very thirsty. Give a pretty heavy dose of physic, then ½ oz. doses of Tincture of Lobelia to control the action of the pulse as often as may be necessary, keep the limbs cold by standing the horse in water or winding the legs with hay ropes and pouring water on until the physic has operated.

ACUTE FOUNDER.

A horse may be foundered by excessive hard rides; permitting him to plunge deep into cold water while hot and sweating, and drinking his fill of cold water; eating large quantities of grain and fodder, and then being briskly exercised; over-feeding with

bran alone, whilst performing hard labor; drinking plentifully at every stopping place in traveling; feeding him more than he should eat, after being half-starved; violent exercise on a full belly; or, not permitting him, after traveling in a hot sun to cool thoroughly before he is given as much as he can drink.

The symptoms that indicate an approaching founder are so common, that most persons will rarely be mistaken. Heat about the legs and ears, a soreness in the feet, with a stiffness so great in all his limbs, that the animal frequently refuses to move unless forced; his flanks and lower part of his belly drawn up; his hide becomes bound or stiff; a constant thirst, etc.; considerable swelling on the ankles.

Cure.—When the effect is confined to the body mostly, and is not attended with fever on the fore legs and feet, the disorder may be effectually removed by giving first the following:

Barbadoes Aloes, half an oz; Root Ginger, half an oz.; Jalap, half an oz.; Gum Myrrh, quarter oz.; thoroughly pulverized, and add one pint of warm water. Three hours after repeat the dose. If the above cannot be obtained, give Warm Lard, one quart; Molasses, half a pint.—If an operation does not follow in from four to six hours, repeat the dose. Should the case be attended with a partial suppression of urine, give the following:

Rosin, one pound; Ginger, half a pound; Sulphur, two ounces. Pulverize well; to two ounces of this compound add one pint of warm water, and repeat until relieved. This remedy seldom fails to remove all obstructions from the urinary organs without danger of inflammation or other injury.

FOUNDER IN THE FEET.

After a severe hard day's work, or when very much heated, if the horse gets a sudden chill by standing in snow or cold water, it is not uncommon for him to be seized with a general stiffness, and every symptom of fever. By degrees, however, it is observed that the affection is felt more in the limbs than in the body. On feeling the feet, they will be found intensely hot, and the pastern arteries beat with force. The animal exhibits extreme tenderness of the feet, and will scarcely move without compulsion. The fore feet are usually most affected. Of this, however, we can judge by feeling and by the position in which the horse stands. When he draws his fore-feet under him, the hind ones are most diseased.

After a few days, unless the animal is relieved, a separation of the hoof from the coronet takes place, and it eventually falls entirely off.

Cure.—I have treated many cases of this kind with uniform success. First see that the bowels are in a proper state. If a physic should be necessary, give that recommended in the preceding article, then if the urinary organs should be free from obstructions, and the appetite natural, no other internal remedy will be required. The hoofs must be kept soft. Should the appetite fluctuate, the coat stare, and be attended with hide-bound, give the Powder directed for Acute Founder. An effectual cure has followed from taking off the shoe, and applying lard raised to the boiling point, to every part of the foot.

—CAUSES OF THIS.

Fever in the feet usually commencing in the muscles of the leg or shoulder, and extending to the feet. In all cases make the operation as for stiff shoulders or sweeny, then have the horse shod as directed in article on shoeing.

FOR BRITTLE HOOFS OR SPONGY FROGS IN HOOFS THAT ARE DISEASED AND CHALKY.

Anoint them with equal parts of dog's grease, tar, turpentine, boiled together. Scrape out the frog clean and anoint the affected parts also all around the top of the hoof, every four or five days, it will make them grow strong and tough and assist in forming a healthy frog.

HOOF EVIL THRUSH OR GREASE HEEL.

The cause of this disease is over feed, want of exercise, or filthy stables. Symptoms—a discharge of offensive matter from the frog and around the top of the foot. Put a stiff shoe on the foot keep it from contracting. Give the cleansing powders, for ten days, wash the parts clean once a day with Castile Soap, give gentle exercise then use the healing wash for old Sores, three or four times a day, or the corrosive Liniment in the same manner, either of which are very commendable. Continue the cleansing powders, and wash for several days after there is no appearanee of disease.

CERTAIN CURE FOR THE SCRATCHES.

The Scratches is a disease similar to the preceding one, and also requiring similar treatment: however, we give a receipe separately, which in all cases proves a success.

Take 2 ozs. Sulphate of Zinc; 1 oz. White Lead; 1 oz. Goulard's extract. Pulverize, and mix with ½ lb. of lard. Cleanse well the parts affected with Castile soap; after which apply thoroughly the mixture as given; after two or three days, cleanse, and make the second application and so continue, until a cure is effected.

A GOOD OINTMENT.

Take the Ointment of Rosin, 5 ozs.; ¼ oz. of fine ly ground Verdigris; 2 ozs. of Turpentine; Mutton tallow 2 lbs.; ½ oz. Oil of Organum; ½ oz. tincture of Iodine; mix well. This is one of the best medicines for Scratches, Hoof Evil, Cuts, and is good to apply on Fistula, after the rowls are taken out.

HOOF MEDICINE.

For tender feet, hoof bound, etc. Linseed Oil, or Neats foot Oil ½ pt., of either, Turpentine, 4 ozs.; Oil of tar, 6 ozs.; Organum 3 ozs.; Mix and shake well, apply it as the directions for the Ointments. This is the best if the horse has been lame long; it penetrates the hoof sooner than the Ointment; both of them should be applied at night, so the horse can perform his daily labor.

Take Rosin, 4 ozs.; Beeswax, 6 ozs.; Lard 2 lbs. melt together; pour into a pot, add 3 ozs. Turpentine; 2 ozs. finely powdered Verdigris; 1 lb. Tallow; stir until it gets cool. This is one of the best ointments for the hoof ever used. It is good for corks or bruises of the feet. For hoof bound or tender feet apply it all around the top of the hoof, down one inch every day, first have a stiff shoe on the foot, and cleanse the cut or crack. Never cut or burn it.

GRAVEL IN THE HOOFS.

The Gravel in the hoof is an incident that happens to horses in traveling, and is brought on by small stones or grit getting between the hoof and shoe, settling to the quick, and then inflame and fester; it produces lameness and causes a horse to undergo very excruciating pain. The first step necessary for a horse's relief is, to have his shoes taken off and get the stone out. You may readily ascertain where they lie, by pressing the edge of the hoof with a pair of Pincers. After all the gravel is removed, which may be known by a discontinuation of the blackness of the place. The wound caused by cutting for the gravel may be easily healed by melting together equal parts of Beeswax, Rosin, fresh butter or Sweet-oil, and pouring the mixture on the wound, warm as the animal can bear it, without giving pain. Then warm a little tar or pitch, and pour a small quantity over the wound and its neighboring parts, to keep out the dust and defend the foot from any hard substance for a few days; make a free use of the Hoof Ointment all around the top of the hoof, to keep down fever.

TO CURE CORNS.

Take off the shoe, cut out the corns and drop on a few drops of Muriatic acid. Then make the shoe so it will not bear on the part affected; repeat every three weeks. Apply the Hoof Liquid to the hoof to remove the fever. This is a treatment that never fails. In addition to this make free use of the corrosive Liniment for three or four days.

QUITTER.

This is an inflamation on the Quitter, between the outer crust and soft structure of the foot; raising a large lump, or forming a ring around the top of the hoof; which at first is very hard, but afterwards forms a tumor, which gives the horse great pain to walk. Treatment.—Poultice the foot with a poultice of flax-seed meal, covered with ground Mustard; and apply for three days, or until it gets soft; then wash clean, scrape out the frog, and anoint with the Hoof Ointment, as prescribed on preceding pages. With this treatment I have cured over one hundred cases of this kind in the last year; cases that are less obstinate, can be cured by a free use of the corrosive Liniment, applied once a day for three or four days, in the frog, and around the top of the foot; after which make a free use of the Jimson ointment, til a cure is effected.

WINDGALLS.

Six ozs. of pulverized blood root; 1 qt. of good uniegas; simmer together until reduced to half the quantity. Apply twice a day, and bandage with a

sponge of convenient size. If this does not cure use the spavin and ring-bone medicine.

LAMPAS.

All young horses are liable to this complaint. It is nothing but inflamation of the gums. Bleed or scarify the gums. Never burn, for it spoils the teeth; and adds to the cause of the disease. Give mash; rub the gums with salt; give the cleansing Powders.

BIG, OR MILK LEG,

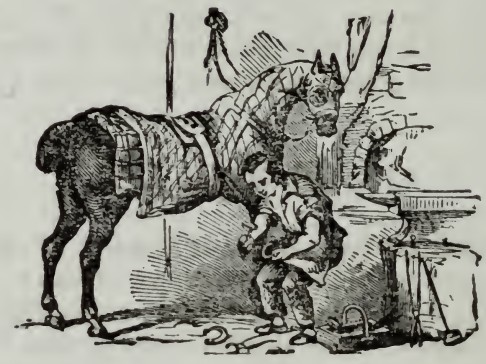
Is brought on by a hurt, or a want of action in the absorbent system; it is drospy of the muscles of the leg. Apply the Liquid Blister every three hours until it blisters; then in six hours grease with soft oil of any kind. In eight days wash the part clean and apply it again. Repeat three or four times and then use the Iodine Ointment. If this does not remove it all, apply the spavin medicine which will.

SCOURING.

Colts and horses frequently scour from to free use of green feed; or from over exercise or exposure to cold rains. Young horses will scour and sometimes without any apparent cause. They should be kept quiet, and given the following mixture:—Laudanum ½ oz.; thick Starch, 1 pt.; and one hen's egg, give at single dose. Repeat if not better in three or four hours; this former for a colt. For an old horse, the following:—1 oz, tincture of Opium; 1 oz. tincture of Rhubarb; 1 oz. tincture of

Camphor, 2 ozs.; of starch or flour; combined with one half pt. of milk. Drench and repeat in half an hour if necessary.

SHOEING.



It requires no little skill and practice to shoe a horse properly. Every one who choses to term himself a blacksmith should not be entrusted with a valuable horse; for a great many hoof diseases are the result of unskillful shoeing. The first, and indeed the most important operation in the shoeing of a horse. and that too: which requires the most skill and prudence, is the paring and triming of the hoof. The hoof should be reduced to its natural size; the bottom rendered smooth and level by the use of shoeing butress; the frog should be trimmed neatly and carefully, in form a little convex, and gradually taper to a point. The iron of which the shoe is composed, should be rather tough and of the first quality. The shoe should be an exact

fit; should be smooth and level, so that it will fit the hoof exactly, without first being heated and applied to the hoof, in order that its impression may be made and a fit thereby effected. The nails should be made with small heads, for they are not so liable to catch on obstructions and thereby wrench the shoe and loosen it from the foot. The nails should be driven with care, and regularity; high enough to hold the shoe from two to four months. The points of the nails should be well clinched, and the hoof neatly rasped below the nail points. Shoes should be of different sizes and weights. For draft horses they should be heavy, strong, and rather light at the heels; for roadsters, light, and rather of a medium size, with good substantial corks, but not too light at the toe. A horse that is hoof bound, should be shod in the following manner:

Pare the toes down well and leave the heels as high as possible. The shoe should be beveled towards the outside of the heel, commencing from the last nail hole back, and set well under the foot. After the shoe is adjusted, use the Hoof ointment or Hoof Liquid. This will spread the foot by a gradual process, that will not be injurions to the foot. Do not have the foot spread by an instrument, or have it rasped above the nail holes, as it will injure the foot.

HOW TO JUDGE A SOUND HOOF.

The hoofs of a horse should be proportioned to his size; of a dark color, smooth, tough, and nearly round; not too flat nor too upright, and the hollow. White hoofs are much more tender than any

other color, nor do they retain or hold a shoe so well nor for so long a time. A foot that is somewhat flat, turning up at the toe or full of ridges, or flat and pumiced on the under side, strongly indicates founder or other injury. If the hair lie smooth at the top of the hoof, it is an evidence of its being good, should there be nothing unnatural in its shape; but if the hair stands up and appears rough, and the flesh swelled a little beyond the circle of the hoof, it is a proof the foot is in some way diseased and a ring-bone may be apprehended, or a quittor, deep seated ulcer or a hoof disease of some character

I deem it proper to give here one of the most prominent causes of the disfigurement of the hoof. It is often the case that a horse is partially or otherwise wholly ruined by the carelesness of leaving old lumber lay about the barn-yard, through which extend sharp nails and frequently the animal in its playful moments, pierces the hoof with these rusty nails, which is very poison causing acute inflamation contracting the hoof, producing narrow heels or even an entire supuration of the hoof.

For corns, and burns, and frosted feet.
There's not a cure that can compete
With 'Bowersmith's Liniments,' all of which
May be obtained by poor and rich!

The Ointment and Liniments will ensure,
For man and beast a perfect cure,
And hence its praises should be sung
Throughout the world, by every tongue!

CHAPTER, IV.

THE HOOF—ITS FORMATION AND STRUCTURE.

The horse is more liable to unsoundness from defects of the feet than any other disease to which he is subject. It is therefore, a matter of great importance that we should become acquainted with a knowledge of his hoof, its formation and structure. And in writing for the information of the reader on this point, we shall speak plainly, avoiding the use of clasical phrases—too often resorted to by authors on anatomical and other subjects, and so little understood by the general reader, as to be truly to many a *dead language.*

The diseases of the hoof are various: caused by fast driving on hard roads, strain by heavy draughts, hard or plank floors or filthy stables, bad shoeing, &c. The diseases thus frequently engendered, not, only effect the foot, but the entire limb often producing corns, hoof rot, grease, scratches, thrush, spavin, ring-bone, splint, &c.

In giving a synopsis of the anatomy of the foot of the horse, we shall commence with the hoof, which is the outside shell or horny substance covering the different muscles, bones, blood-vessels, nerves and other tissues, which form the foot proper. An eminent writer on this subject, in drawing a comparison between the fore-leg of the horse, with that of the arm of a man, says, whatever difference appears may be traced directly to that economy in nature which adapts the simplicity or

complexity of structure and is due to the fact, that its use is limited to the support of the body and its progression. The interior of the outer-hoof above mentioned, containing the muscles &c., is the inner-hoof encasing the coronet and coffin-bone, the latter, a small bone in the midst of the hoof. Its texture is light and spongy and traversed through by numerous blood vessels which nourish the soft and sensitive tissues by which it is surouded. Between the coronet and coffin-bones, and in the concavity of the latter, is a small bone, styled the *navicular*, from its boat shape form. From the upper edge of the coffin-bone are attatched laterally, two gristly or cartilages substances, extending backward, giving elasticity to the movement of the foot, and as high as the pastern joint, and inwardly to the sensitive frog attaches to its sides, the entire uniting in one mass, filling the cavity around the coffin-bone. The lateral portion of the cartilage attaches with the horizontal, and passing inwardly forms a hollow space behind the coffin-bone, that contains the spongy matter of the heel, also. the several blood vessels, nerves, &c., which pass through and nourish the sole of the foot. *The Cyclopedia of Anatomy*, says, "The upper surface of the horizontal process of cartilage is full of scalrous elevations and depressions that defy dissection, among which is to be found a quantity of gelatina-ligamentous tissue. Beneath, or under the surface of this horizontal layer, the sensitive sole and bar are adherent. As it approaches the frog or center of the foot, it looses its cartilaginous nature and becomes coriaceous (resembling leather; tough) or rather ligacento—coriaceous texture, (a strong, compact substance, serving to bind one

bone to another,) agreeing in this with the internal frog."

Nature has done much in displaying its handiwork in the formation of the foot of the horse. And although many of its parts seem delicate and frail, all are calculated to meet the greatest demands for strength, speed, and durability, with reasonable care and attention. The entire formation of the hoof, with the distribution, with its different layers of elastic tissues and soft cartilageous substances between the inner-hoof and inner bones entirely prevents any jar to the limb, which it would necessarily receive in traveling over hard roads. This combination of matter materially breaks the force occasioned by the foot, while the animal is either pulling heavily or running rapidly over hard ground. Besides, the equal distribution of elastic cartilageous substance cuts as an elastic cushion, bringing bearing upon the entire foot, and tending to the free and easy movement of the animal, without pain or shock to the system. Over the surface of coffin-bones is a thick, tough substance of lacteal matter, forming what is sometimes known as the sensitive frog. This matter, it is said by anatomists produces the nails of the human hand, therefore its adaptation to the point here assigned it.

From the knee joint to the crown of the hoof the skin on the leg gradually becomes thicker, forming at the hoof what is known by writers, as the coronany band. From this band there is a finer formation of the skin extending downward and over the coffin-bone richly suppressed with the nerves and blood vessels, throwing out their secretions of matter, which nourishes and gives growth to the horny substance compressing the inner hoof, and

also the minute projecting filaments covering the surface of the coffin-bone, the internal frog and the numerous cartilages around the inner surface of the hoof, decreasing as it approaches the heels. This matter, thus supplied to the harder portions of the foot, lends elasticity to the entire, and aids greatly in obviating the shocks to the limb, which would otherwise be inevitable.

The wall or outer hoof which is that part of the foot extending from the hair, or coronary band downward, is generally in ordinary sized horses, in depth from three to four inches in front, growing gradually less toward the heels, and in thickness in front about half an inch, becoming thinner as it extends backward. This outer hoof is divided into toe, quarters, heels and bars, of which the toe constitutes about two thirds. Here is the thickest shell and in most well formed, good feet, stands at an average of elevation about 45 degrees. When at a higher degree, it is generally admitted to be an evidence of weakness. Flat feet are generally weak and are common in heavy draught horses, brought on, as is supposed, by the animals own weight, causing a want of growth, from depression of the inner walls of the hoof.

The portions of each side of the toe, between the toe and heels, are known as the inside and outside quarters. The wall here is thinner as the quarters approach the heels, and the grain of the crust differing from that of the toe, which runs a straight line up and down, is sloping obliquely downward and backward.

The portions of the foot terminating backward is known as the heel, the wall of which is much thinner and shorter than at any other point, being

only about an inch in length, and frequently less than a quarter in thickness. The bars located in the center of the foot on the under surface, are in the form of an inverted V.

In a well formed healthy foot, that has never been shod, the bars present the appearance of having been sharpened, between the center of the foot and heel. They are said to be well adapted to keep the latter open, and prevent contraction of the former.

A well informed writer on the subject of the formation and structure of the horse's foot, says, "The result of his mechanism is, that every step, as the weight is thrown upon the foot, the coffin-bone descends, elongating the elastic fibrous tissue connected with the sensitive laminar, and pressing upon the highly elastic tissue of the sensitive sole, which rests upon the arch of the horny sole, causes the latter to yield and descend. The wall being elastic, especially toward the heels, is easily pressed outward, so that the ground surface of the foot is larger while bearing the weight than when the pressure is removed. Whenever the weight is taken off, the wall springs, back, and the sole receives its arched form. By this means the step is rendered elastic, jaring is obviated, and injury to the sensitive sole and sensitive frog is prevented."

The frog consists of a series of elastic arches, and not of a bony substance as might seem to be the case. It is of a wedge-like form, and not inaptly compared to an elastic Keystone received into an elastic arch, communicating in some cases, and admitting in all, the springing movements of which such an arch is capable. The base of the frog is located between, and connects the posterior curved portions of the hoof; the sides connecting by their

upper edges with the bars, leaving two channels between the lower border of the bars upon the ground surface. The outer and inner surface of the frog from three foldings, acting as springs to keep the heels apart and foot spread.

The blood vessels of the foot, as well as the nerves, are numerous and form a very intricate network or vessels, some of them deeply seated, and descending into the interior of the foot, passing into the coffin-bone, through its minute chambers, entering into the edges of the sole, and the sensitive parts of the foot.

OPERATIONS.

THROWING AND CASTRATING COLTS.

In this more than anyother operation on the horse, practice and confidence are essentially requisite. Prepare yourself for the work by having at hand a throwing apparatus, made of strong leather, about two inches in width and in the style of a Pennsylvania wagon breeching, with a strong inch and a quarter strap, sixteen feet long, sewed to each ring, a rope sixteen feet long, a pair of pincers, a sharp knife, clamps, needle thread, and grease. The clamps should be strong and filled level on the inside with dough, or with equal parts of tallow, corrosive sublimate and red percipitate, well pulverized, sufficient to cover the dough and pressed down with your finger.

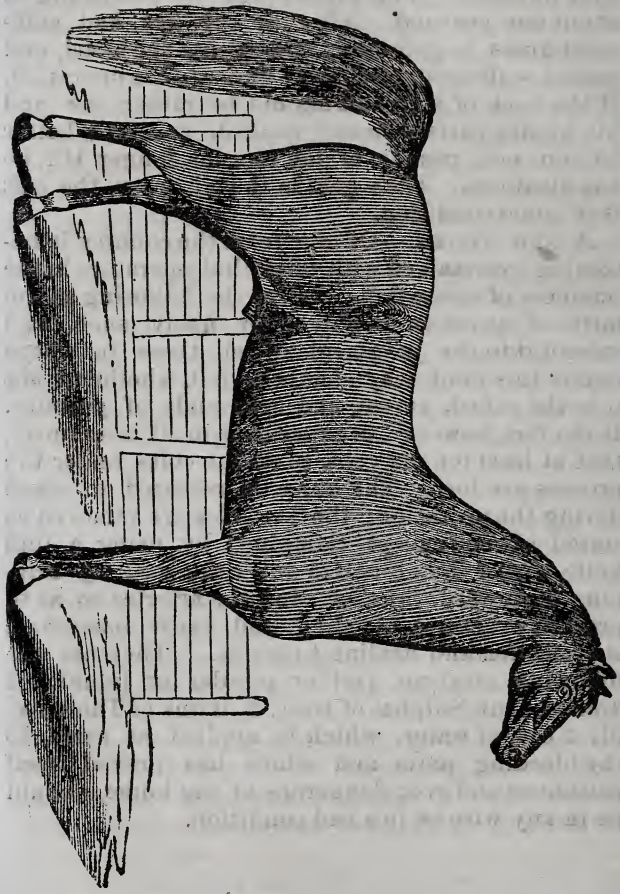
Now, you are ready for the work. Catch your colt, and lead him on to a smooth yielding surface, slip the breeching over his head, the straps back and between his legs, drawing the ends forward and through the rings in the breeching from the inside,

one assistant to each strap holding tight, walking backwards, while a third draws the colt forward by the halter or bridle, urging him thus forward and backward, he must come down, when he should be securely tied. Take in your hand the Testicle, drawing it as near its natural position as possible, holding it firmly in your hand, make a straight cut backward being careful not to cross the seam. Open well the scrotum. Now force the stone out and cut the striffin skin sufficiently large, so as not to hold any matter that may accumulate. Draw down the Testicle and clamp well up on the cord, dividing it equal in the middle of the clamp, and with pincers draw close and tie tight. The cord must be cut off about one eighth of an inch below the clamp, and a little corrosive sublimate applied to the end of the cord. Care should be taken while castrating, to look for what is termed a "water seed," found if it exists, between the striffin and outer skin. It is a watery substance and has the appearance of the white of an egg. If found, run your knife around it and take it off clean, if allowed to remain, it forms a hard red lump, which must in time be removed. There is also a whitish, flabby, fatty substance in the same locality, which should be cut away, taking care not to cut an artery. If an artery should be cut, immediately take it up with needle and tie the ends. Examine the Sheath and Penis, cleansing both and greasing well. In the latter is frequently found a "bean," a hard matter which should be removed. If it is permitted to remain it will greatly endanger the life of the horse or colt.

The proper time to geld colts, is during the spring or fall. The spring is the most favorable

time if the colt is in good condition; if he is not, wait until fall. The proper age for castrating is about one year old. After the colt has had sufficient grass, to gain flesh, and cleanse the blood, and gained sufficient strength to undergo the operation. If the neck of your colt should be rather low and his hinder parts slim and peaked, you had better let your colt, run six or ten months longer till he has filled out. Then geld in the fall when the colt is in good condition.

A NEW SYSTEM.—Of late years the country is becoming overstalked with unskillful operators in the business of castration. I give the following as the mode of operation employed by many such, and submit it to the judgment of all those in whose hands this book may chance to fall, whether or not it is the safest, surest, and best mode of practice. It is a fact however, as experience in all cases prove, that at least ten per cent. of all the colts under the process are lost. The horse is required to stand during the operation; the Testicles are removed as stated above (except clamping) by using a dull knife, or the thumb nail to sever the cord by scraping downward, thus bruising the arteries so as to prevent excessive bleeding and cause immediate suppuration and healing to set in. They use the following mixture, (either powder or liquid;) 2 drams of sub-Sulphat of Iron; 2 drams of Tanic Acid; 2 ozs. of water; which is applied as usual to the bleeding parts and which has proved itself poisonous and even dangerons to the horse, should he in any wise be in a bad condition.



Rupture or Hernia, is a term applied in veterinary Surgery to a protrusion of any of the abdominal viscera through a natural or accidental opening or rent in the abdominal walls covered by the integuments.

The cause of Rupture in animals is most generally the result of an injury by a sharp implement, which may rupture the inside wall and not the skin of the abdomen, and thus let one or more folds of the bowels protrude through, making an unsightly tumor.

Rupture occurs along the flank, and along the inside of the thigh, where it and the abdomen join; this being the thinest part of the abdominal walls.

Various names are given to these ruptures, depending on the condition of the protruded bowels, such as Reducible (or returnable into the abdomen.) Irreducible; Strangulated; that is subject to some constriction which not only prevents their return into the abdomen, but interferes with the passage of their contents.

The discrimination of Rupture from other tumors is comparatively easy to a dextrous hand. Still Ruptures may be mistaken for tumors of a soft and yieldable character located in the same place where Ruptures occur. Such as Encysted tumors and abscesses. The general symptoms of reducible Rupture is when taken into the hand, Soft, elastic and rounden when it contains only the intestine, when pressed upon and worked around in the hand to reduce the bowels, it returns easily. If however, the net covering the intestine protrudes with the intestines, is flabby and unequal to the touch and when pressed is slower and more difficult to return.

Ruptures become irreducible after they are of long standing and adhesions form between the sack and its contents. Also by a constriction of the rent so as to prevent its return, in either case an operation must be performed to reduce the rupture, which will be spoken of in our treatment of rupture.

Strangulated hernia occurs in old as well as recent ruptures, when it is constricted in such a way, that the contents of the produced bowels cannot be propelled onward, and the return of the venous blood is impaired. The symptoms are the same as in colic and obstruction of the bowels, and finally inflammation of the bowels, especially if there is not relief given by an immediate operation after every means has been used to reduce by manipulation. The operation will be spoken of in the treatment.

THE TREATMENT OF RUPTURE,

depends on circumstances; when the rupture first occurs the plan is to return the bowels, and prevent its coming out with a pad and bandage, which should fit so neatly as not to rub open the sound skin. The trus should be made out of hard wood; the size of from one half of a hens egg divided the long way, to that of goose egg, depending on the length of the rent which can be felt through the skin. The ball is nailed on a stiff strip of sole lether from three to four inches wide and a foot long. For rupture in the flank a strap or strong canvas is fastened on the leather and passed around the body so as to buckle on the top of the back with the ball on the slit. When the rupture is on the inside of the thigh,

then another strap is fastened to the leather to pass through between the legs and be fastened to the strap on the top of the back. This should be kept in place till the rupture has time to heal shut which will be from two to four weeks. When this plan does not succeed, then an operation becomes necessary, which consists in cutting down to the rent and sewing the inside slit up with a silver thread; first freshing the edges with the knife, leaving the silver thread permanently in place; then closing the outside cut with common stitches, and placing a bandage around the body of the animal, thus completing a cure. Light feed and great care must be given the animal for two or three weeks until the parts completely heal. An old rupture, where the opening becomes large and round, requires a different operation. It is then necessary to prepare a silver plate, made one half to three fourths of an inch larger than the opening, hammering the plate concave or oval in the center to fit the rupture. An incision is made across the lower part of the rupture large enough to admit the plate, the fascia being dissected apart, the plate is placed over the opening and left there permanently, the outside cut is neatly closed up with common stitches and a light bandage is placed over it. Then all that is needed to complete the cure is rest, light feed, and cold-water dressing. This is a good and successful plan of treatment, which I have performed a number of times successfully.

In irreducible hernia, where the contents are adherent to the sac, these must be broken up by carefully cutting down to the rupture and with the knife or the fingers breaking the adhesions; then reduce the protrusion, and, where the rent is

long and can be closed by silver thread, it is the best plan to follow, but where the opening is round a silver plate must be inserted as spoken of above.

In strangulated hernia, where there is great suffering and danger of inflammation after failing to reduce it by the hand, it is necessary to enlarge the rent by cutting in on the lower edge to the sack and with a blunt knife enlarge the opening, then reduce it and proceed as spoken of above.

COLLAR BRUISES.

Young horses which are high spirited will pull with such force, that they will bruise the coracoid process of the scapula; and when the system is out of condition and the blood either to thick or to thin infirmation will set in to try and cast off the congestive matter and fluids. In all such cases when they enlarge make an orifice in the lower part of the swelling by running a seton from the bottom, upwards through the center, open the lower cut sufficiently large that the contents may drain off freely.

Treatment —make a free use of the Jimson ointment, both on the outside of the affected parts, also wet the seaton with the same twice per day and draw it into the wound until you can see a healthy blood runs from the orifice; the swelling abates; or a free suppuration sets in; then remove the rowl and continue to use the ointment. For any case of this kind of old standing or any hard callous that is detached from the bone; such as collar bruises, If by feeling of it with your finger and thumb, it is fouud that the lump is detached and will move backward and forward, the skin may be opened the full size

of the callous croswise, then peal and roll back the skin, having a needle with a strong thread in it run the needle through the edge of the callous to pull open. and scrape the lump close until you can cut it out. If it should bleed much apply the corrosive liniment or warm vinegar with some alum in it. It can be healed best with the green ointment, before annointing, wash clean with castile soap and warm water. I have removed hundreds of detached lumps of this kind, some of which would weigh ten pounds.

The animal should always be thrown or a twitch applied, to secure them for the operation.

DOCKING.

Of the different modes in practice of docking a horse, the best, and the one which I generally adopt as in my opinion the safest, and causing the least suffering to the animal is as follows: Draw back the hair from the point where you desire to cut, tying it with a string, so as to keep it out of your way; then take a piece of two inch plank about 8 or 10 inches square and place it on the top of the hip, (left side) and draw the tail back on to it, so as to have the point where the cut is to be made, as near the center of the board as possible.

Then feel for the joint, and take a sharp two inch chisel and placing it on the spot, and with a mallet strike so as to sever the parts with one blow. Immediately bind up the wound with a cloth containing horse or hog manure and allow it to remain for about twenty-four hours. Then remove it and wash off clean with salt and water. Then anoint it with

the Jimson ointment. Three men should assist in the operation. Docking is of great value where the horse is weak in the spine, otherwise it is uncalled for and in fact is injurious to the horse in many instances; among which are the fighting of flies &c.

SEATON HOW TO APPLY.

Take a piece of leather string or white tape, the former is preferable; then cut holes in the skin where to be applied and introduce the string with a large packing needle, leaving about eight or ten inches of the string at each end, tying a toggle or wooden button to each end so that you may draw it back and forth to pull in medicines, to cause suppuration and a free discharge of pus. Setons are often useful in keeping up a drain to draw what are humours from parts; or by this irritation on one part, they lessen the inflamation in another part not very remote, as when applied to the cheek for opthalmia or inflamed eyes, They also in the same way lessen old swellings by exciting absorption.

Another useful action they have is to make a dependent or convenient orifice for the escape of lodged matter; thus a seton passed from the upper part of the opening of pole-evil, through the upper part of the integuments of the neck, as low as the sinnews run, will often effect a cure without further application. The same with fistular withers, which sometimes run under the shoulder blade, and appear at the arm point; in which case a blunt seton needle, of sufficient length to be passed down to that point and to be then cut down upon, will form the only efficient mode of treatment.

HOW TO DRENCH A HORSE.

Take a strong, long necked bottle, raise the horse's head by getting the halter over a beam in the stable, then take out his tongue on the right side, introducing the neck of the horn or bottle from an elevated position, taking care not to let him touch it with his teeth. If there is any difficulty in getting him to swallow, place your hand tightly on his nostrils, so as to interfere with his breathing, and the drench will soon be swallowed.

It is not safe to drench through the nose, as there is danger of the contents passing into the lungs, which would result in the congestion of the same or otherwise immediate death.

FRACTURED BONES.

At no period in the existence of the horse, is he so liable to accident by the fracture of a bone as in his colt-hood. We shall therefore give from our experience such treatment as is best suited to accidents of this kind, and those remedies most likely to be successful. Fractures in the body above the limbs and the larger bones, are difficult of treatment, and frequently result fatally. Fractures are of two kinds—simple and compound. Simple fracture being merely the breaking of one bone, without laceration of the flesh, while compound fracture includes one or more bones, often breaking the skin, lacerating the flesh and ligaments, rendering treatment exceedingly difficult, the healing process slow, and the result in most cases very doubtful.

Where the skull receives a fracture, it is best to abandon the idea of cure altogether, as no permanent relief can be effected. Some cases have come

under our observation, where prospects of recovery for a time looked most favorable, but finally the animal died from apoplexy. Such fractures are generally the result of brutal treatment by passionate drivers, who, as we have frequently observed, strike a horse over the head with a heavy club or the but end of a whip, with sufficient force to kill the animal or produce concussion of the brain, the latter generally terminating in permanent injury—frequently blindness and deafness.

Fracture of the ribs is a matter of rare occurrence, and generally the result of a kick from another animal. Such an injury often passes unnoticed by the owner, although the horse is apt to flinch from the touch when being harnessed or curried. But slight relief can be applied in such cases. When discovered, the best plan is to rub the part gently and frequently with nerve and bone liniment. Hot salt and water, or strong vinegar, will answer the purpose well, but the liniment is preferable and when it can be had should be applied.

Fractures of the bones of the nose or nasal organ are not of unfrequent occurence, and often pass unnoticed, unless where the bone is very much out of place. In such cases the assistance of the Veterinary Surgeon should be had, the bone replaced and bandaged, as in distemper. The same treatment as to bathing in rib fractures can be applied with advantageous results.

Fracture of the limbs are more frequent than any other to which the horse is liable, occasioned generally by a fall a kick, or the horse getting his foot fast in a bridge and such like occurrences. A broken limb, particularly in an old animal, is a serious matter, and to treat it requires, not only skill but

close attention and care, without which the horse, if he lives, becomes useless, or probably death ensues, The lack of experience in such cases even among men who have owned horses all their lifetime, is a great impediment in the way of successful treatment. Many suppose that if a horse gets a limb broken, that his suffering may as well be terminated by putting a bullet through his head. This is great error, for if he is promptly treated, his life may be saved and he made useful for certain purposes for many years. Mares for instance may become good breeders as if nothing of the kind had ever occured. In cases of simple fracture, the animal is generally able to move around as before the accident., being only very lame and of course sore. In such cases the parts should be well bathed with nerve and bone, or other pungent liniments, and bandaged carefully with strong strips of stiff cloth, as tight as possible, without being so tight as to retard circulation of the blood. (For bandages see recipes on another page.) After such an accident, a horse, as before stated, will move around, but after a few days becomes weary and will lie down if permitted to do so. In order to prevent this, which would in most cases be fatal to his recovery, as soon as possible after the accident, arrangements should be made for his support, by placing a strong cloth around his body, and by means of a rope attached thereto, suspended from the loft of his stable, sufficiently high, so as barely to let the injured limb touch the floor. To this cloth should be attached breast and breeching straps to prevent it slipping backward and forward. By this mode of procedure and reasonable care and attention to constant bathing with the liniment as before named, from

three to four times a day, in nine cases out of ten the life of the animal will be saved. But the bandage should not be neglected. They must be removed frequently, say twice a week and immediately rebandaged; but before doing so, rub the part gently with your hand and apply the liniment.

Should the accident occur in the field, or other place, from where it is impossible to remove the horse to a stable, a structure may be formed with poles and chains, so arranged on both his sides, that with the help of a few stout men he can be raised to a proper position. In most cases it is advisable to cover the structure over, to shelter the horse from the weather. Both ends being open is sufficient for air.

When the fracture is of the compound nature, the bones displaced, etc., the limb should, as soon as possible, be bathed copiously with warm water and castile soap to reduce any inflammation that may have taken place. If the bone is merely misplaced, after bathing, the limb should be gradually and gently pulled until it is worked into place again. Now apply a strong stiff bandage of cloth about three inches wide; first lapping on a strip of cotton, commencing winding on about four or five inches below the fracture, giving the bandage an occasional twist on the back part of the limb, to cause it to press equally on all parts. If the fracture is a bad one, thin splints of green pliable wood, cut to the shape of the leg, and placed under the bandage may be used with advantage, but care should be taken not to allow them to press too heavily on the injured part. If the bones are not displaced, or the limb bent, simply bandaging and bathing may answer the purpose. Great care

should be taken to prevent fever, which would in most cases result in death. To obviate this, and prevent costiveness, occasional doses of Cleansing Powders should be given, with bran mashes, chopped feed, or oats, but no corn should be allowed, it being of too heating a nature. If in the Summer season, a little fresh grass may be given with advantage.

The time of healing, depends much on the nature and extent of the wound, also the condition of the animal and season of the year. In general fractures below the knee, in cool weather and with good treatment knit in about a month. If above the knee the healing process is more tardy, probably taking three times that time. Much is also owing in the several cases of fractures named, to good nursing, without which you may not only lose your patient but also your time.

TO STRAIGHTEN A HORSES TAIL. It is often the case that horses of the finest symmetry in every other respect are disfigured and rendered unsalable by means of crooked tail; caused by contraction of the cord on either side, I use successfully the following treatment. Take a sharp knife with the back of the blade dull, insert the knife just beneath the cord the side of the blade being to the cord, after inserted turn the edge of the knife so as to be horizontal to the cord, sever the cord in this manner in one or two places, after which tie the tail around in the opposite direction to a collar on the horse, let it remain so until the cords unite or the wounds are filled up by other matter.

CHAPTER VI.

STABLE MANAGEMENT.

The cost of a convenient and well ventilated stable, is no more than is required for the construction of an inconvenient and illventilated one. My experience and observation in traveling for the past thirty years, caring for my horses, in numerous stables, almost daily during this time, over an area of nearly twenty states, has brought to my notice, both unpardonable ignorance and carelessness, in the awkward and unjudicious manner in which stables are constructed and arranged. This kind of taste and economy is similar to that which is exibited in a great many dwelling houses. They are finely adorned out-side and even expensively constructed with regard to strength and durability while the inmates suffer for want of that indispensable architectural arrangement—ventilation. Small apartments after being used to sleep in, are very hurriedly, again arranged for its occupants, by spreading the clothes on the bed; closely adjusting the windows; shutting the door; all of which are suffered to remain so, until again some unfortunate being is obliged to occupy it. The old and time worn feather bed becomes fetid and musty so as to be very offensive to the smell, on the instant of entry to the room. The air is poluted with these foul elements and other excrementitious matter; there is no circulation; the window usually being closed, hence if opened exposes the person to a draught of

air, which of itself under the circumstances is very unhealthy and dangerous. Beauty, refinement, intelligence and all the nobler qualities fade into insignificance, when snbjected to the prostration of a nervous head-ache arrising from such a manner of sleeping. It is an unpardonable fault, that should always be guarded against in the begining, by making provisions for ventilation over doors and admitting of the windows being hoisted or lowered and surely every house-keeper or chamber-maid, who posess any degree of intelligence, should see that such apartments. are thoroughly ventilated after being used. It is believed that the fore-going is a true theory for the arangement of the stable.

But as its management and practical utility, is intrusted to that class of individuals, who for taste and refinement are far inferior to woman; and who, (it must be admitted,) know less of stable management, as a class, than woman about the regulation of domestic affairs; hence I deem it no more than proper, that I should proceed and give some practical hints, and particular instructions upon the special matter, under consideration; that they who wish to improve, may derive some practical benefit therefrom, and by so doing assign to this noble animal, (the horse.) the position and treatment he undoubtedly merits, with relation to man. In the arrangment of the greater number of stables, both in the city and country, it is an observable fact, that they are little more than a closed box over a pool, which perhaps is half filled with water and the refuse of the stable; from which arises through the floor a poisonous exhalation, that furnishes the basis of disease. A large rack is filled with mouldy dusty hay which is heaped against the horses nose. The

manger is partly filled with dirt and trash; the meager bedding impregnated with foul amonia is thrown beneath the manger in the morning, to infect and poison evrything about it; and here the horse is forced to stand and feed, continually breathing upon the mass of filth and hay, which contains amonia strong enough to make the eyes water and smart in half a minute, which is continually rising and poisoning the air. It should be borne in mind that I have no selfish motive in view, more than that of referring to defficiencies it is incumbent upon humanity to correct, and it is my greatest desire to bring to the attention of all entitled to my services, these evils which may be remedied. A stable should be of sufficient size; thoroughly ventilated; yet comfortable and well lighted. The standing room for work horses should be at least five feet wide, and if the horse is worked but little, the room should be large enough to enable him to turn around freeely. If the stable is sufficiently large, a box stall should be used in all cases, but it should be well ventilated. The door should be made loose, and a window above the head, arranged so that it can be opened to give light and ventilation. If a manger or rack, such as is now in common torm across the stall be used, I would suggest an improvement. In the first place should the construction of the manger be such, that the horse will waste feed while eating, it should be replaced by one, the top of which, is about three feet and a half from the floor secondly, should the rack slope out over the manger and horses head; making it troublesome for the horse to pull the hay out and and causing seed and trash to fall into his eyes and mane; and the dust to be brought to the nose and

inhaled; the front of the rack should be brought to an upright position and the back so slanted that the hay will all the time be in the horses reach. The most desirable manger I have seen in my travels, both for conveninece and health, are those so constructed that there is an alley or a floor in front of the manger, with a good tight floor in the manger being level with the floor in the alley. A manger should be built as described above with the following exceptoins--the bottom board should be left off on the side next to the alley; a lattice should be prepared of proper length to fit inside of the manger nail two cleats, one at each end of the lattice, so as to support (it) the lattice one foot from the floor; this affords a means for all the seed, dust and trash from the hay to fall through upon the floor, which can be raked out into alley at intervals: thus doing away with the presence of all dust and trash which is so injurious to the horse, besides during the year a great amount of grass seed may be accumulated and saved, which to first class farmers, is of no little financial moment. The feed box should be firmly fastened to one end of the manger, and large enough to prevent throwing feed out while eating. The place for hitching should be on the farther side from the feed box, to prevent the strap being caught by the foot. The manger should be a level with the breast or shoulders. The nearer the horse is made to imitate his position when eating the better. Every stable should have an opening on the top, to allow bad air to pass out freely. The light to a stable should be so admitted, that the ordinary work of the stable can be done without opening the doors, the windows should be arranged with shutters, so the stable may be darkened if necessary, when flies

are troublesome, or to give the horse a chance to sleep in the day time, which is sometimes necessary also the wall in front of the horses, should not be whitewashed as is often done, for it is injurious to the eyes, if such be the colors of the walls, it should be changed by adding something brown or dark. At an advanced age like this, when all men are supposed to posess some degree of intellgence, it is certainly high time, under ground, cellar stables, which admit of little light and ventilation be discarded, perhaps the wisdom of doing so, may become more apparent to those who are weded to the same, after loseing one or two horses with some form of acute inflammation.

All stables should be built on high and level elevated lands, so that the urinary substance and all other filth would be washed from beneath them. The flooring and side of a stable should be sufficiently tight to prevent the bleak north winds from piercing through the large open cracks, which is the cause of a large proportion of Lung complaints, Pneumonia, or chronic coughs. It is not desirable to make the stable so warm as to shut out the current of air, when a large number of horses are shut up in a small, close and poorly ventilated stable you can soon perceive the hot and fetid change in the air. For each pair of lungs throws off a great amount of carbonic acid gas, and with this carbonate the air soon becomes greatly surcharged so as to be infectively poisonous, it was this doubtless which caused such a great mortality among horses, in New York city this present winter.

FEEDING

In the procuring of feed for horses, under all circumstances, great discrimination and care is required in the selection of the same, which for quality and quantity, will impart the greatest amount of strength, vitality and elasticity to the animal.

Food should be in proportion to the general condition and amount of labor to which the horse is subjected. If there be any extra task, for the horse to perform requiring more than ordinary exertion; the stomach should not be crammed with food as the action of the heart and lungs, would thus be much impeded, the result of which sometimes is conjestion and rupturing of the air cells of the lungs. In the feeding of hay especially, this defect should be guarded against. Horses of a greedy nature will gorge themselves by eating so much hay, even of a poor quality, as to unfit them for labor and is usually found to result in heaves or broken wind. This disease is more prevalent among horses where there is no care in the selection of feed. It is seldom found among horses of the finer class, especially race-horses, for more prudence is used in the selection of feed, and also fed in less quantities so as to harmonize with the demands of the system. The quantity of hay, given a horse should be regulated by the nature of the horse, if not at all greedy he should not be allowed more than eight or ten pounds in twenty-four hours; further regulations should be made, taking into consideration the size, condition, use and amount of grain fed; roadsters require less hay than any others. Dusty or mouldy hay should not be fed under any circumstances, as it is the cause of numerous diseases.

In selecting feed for horses, it should be as near perfect as possible, especially hay. It is generally considered that hay is better when about a year old, no doubt horses would prefer earlier, but it is neither so nutritious or healthy. Hay should retain a good color until a year old and be sweet to the smell. In stacking or packing hay, about one quart of salt, should be used to each ton, this will preserve the hay, keep out insects, render it nice and bright, and give it a pleasant smell to the horse. But as has been remarked already in this article, the amount of hay to be fed a horse, depends upon the size, amount of work to be done, and also the quantity and quality of grain to be fed, which we will now consider.

Corn posseses more heating elements than oats, while oats produce more muscle than corn. These two points being established by experience, it would naturaly follow that the colder the weather the more corn may be fed and the harder the work, the more oats may be fed. Age adds worth to oats for feed. New oats will weigh from ten to fifteen per cent. more than old, but the difference for the greater part is water. The reason why old oats are better, it is claimed they are more easily digested, while on the contrary new oats in any considerable quantity will produce flatulency and derangement of the stomach and bowels. The same is true of corn, only it is regarded still more dangerous when not sound and dry, of course if these facts be disregarded in all respects, it is done at the hazard of the effects heretofore named. As before stated the quantity of oats to be fed, should be regulated by the size of the horse and amount of labor to be performed, ranging from eight to six-

teen quarts per day. The quantity of corn should be regulated in the same manner, with some regard to the condition of the weather, corn should always be fed in the ear, from six to twelve ears are a feed. In hot weather corn should be soaked from twelve to twenty-four hours in some clean water, first adding a handful of salt and a handful of hickory ashes; this will greatly improve the horses feed; aid digestion, and also expel worms. Owing to the ample time given for digestion through the night, it is better to give the larger feed in the evening, for during the day if the work is very great there is not time given. It is well established by experience that some mild cooling laxative should be given occasionally, from eight to ten quarts of wheat-Bran covered with boiling water and let remain until cool, and fed at night from one too three times a week is the finest and best. I usually feed Irish potatoes, one or two quarts a week, with the usual feeds of grain, and from my experience consider them highly useful. Think their worth cannot be overestimated in this regard. Bran mashes and a small quantity of roots, keep the bowels open and the system in a good condition, without the use of them constipation is not improbable, which is one of the primary causes of morbid evacuation, colic, or inflamation of the bowels. It is often an eager question with some, to know the most speedy and best way to make a horse fat. Feed shorts and corn meal with cut straw, to which add a pint of sugar-cane molasses. This mixture, if we may so term it, has no equals, in recruiting up a horse which is out of sorts or poor. If the horse is greedy, and eats too fast, this may be remedied by putting a few round stones in the feed box, he is now

compelled to pick the feed out from among the stones, which requires more time, and of necessity he is obliged to eat slowly. If the horse has performed some heavy task or if when sufficient time can not be allowed to eat and digest an ordinary meal, he may be very much refreshed by a small draught of cold water containing a small quantity of meal. In order to give some systematized manner of feeding and watering, and also to give some idea of the extreme care and attention which may be rendered a horse when necessary I include the system of feeding and watering Mr. Bonnner's famous trotting horse Dexter. "At six every morning, Dexter has all the water he wants and two quarts of oats. After eating he is walked for half an hour or more, then cleaned off, and at nine has two quarts more of oats. If no drive is on the card for afternoon, he is given a half to three quarters of an hour of gentle exercise. At one o'clock he has oats again as before, limited to two quarts.

"From three to four, he is driven twelve to fifteen miles; after which he is cleaned off and rubbed thoroughly dry. He has a bare swallow of water on returning from drive, but is allowed free access to his only feed of hay, of which he consumes from five to six pounds.

"If the drive has been a particularly sharp one, he is treated as soon as he gets in, to a quart or two of oat meal gruel; and when thoroughly cooled, has half a pail of water and three quarts of oats, with two quarts of bran moistened with hot water. Before any specially hard day's work or trial of his speed, his allowance of water is still more reduced."

PASTURAGE.

There is no species of feed more important to the horse breeder than grass; and to select from the different varieties which thrive best and retains their verdure longest, must be left entirely to the judgment of the farmer, he being guided principally in his selection by climate and soil. Almost all the different varieties grow well and flourish for a while the length of time depending much upon the season. The clover, a favorite grass in this country as well as in Europe, has become an uncertain crop, being liable to freeze out in winter, or be parched up by the summer's sun, therefore can not be depended upon as pasture for any season of the year. Especially to the stock raiser is an early and certain supply of grass most valuable. In the breeding season to mares and their brood it is important giving to the dam that species of food, which yields the largest supply of nourishment for their young. Besides, colts soon learn to pick from the green and tender herbage; redering them less burdensome to their dam and promotes their growth more rapidly. But to this end clover either red or white species is objectional as pasture for horses. Either will cause horses to slabber, more especially the white and instead of giving nutriments and strength it has a contrary effect.

Timothy or as it is sometimes called Cat's-tail grass, generally esteemed the most valuable of all grasses familiarly known in the middle States, scarcely come up to our standard as offering reliable pasture. Of late years the severity of the winter has been very damagingly to the growth, and instances have frequently come under our observation, when the frost has been quite as destructive

to its plants as to clover. But in more genial climes for instance, the Southern States, where biting frosts are unknown and of course Timothy is not damaged, will it there afford reliable pasturage? We answer no! for this reason, that it is one of the earliest, to start in the spring, is of rapid growth, soon matures and once ripe, the hot sun of summer and consequent parched soil, soon absorbs all its nutritious qualities, rendering it of little more value for sustaining animal life than dry stubble.

Timothy for hay, among all the varieties of grass known in the Middle States has no equal, but should always be cut before the seed is fully ripe, and in this condition, when well mowed, horses and cattle eat with avidity, and keep in good condition without other sustenance. But to return to our subject-pasturage:

In further consideration of this matter, we shall be brief, noticing the varieties best known, and most approved for this purpose of pasturage. And among the first we will maintain the blue-grass of Kentucky as having a pre-eminence over all others for this purpose. It is remarkable for retaining its green and verdant appearance the entire year round it generally grows about a foot high, throwing out from the bottom a great growth of fine green tender herbage, forming a thick surface over the entire surface rendering its roots equally impervious to the Summers Sun as the winter frost. It is very durable, remarkable for its verdure all seasons, and unless covered with snow, prsenting a beautiful appeaeance to the eye. It is a great favorite with all animals, being very sweet and nutritious. From its continuous growth, it is very valuable as pasture at all seasons. We have known herds of

sheep to live on it and keep in good condition the entire Winter, when it is even covered with snow which they soon learn to remove with their fore feet. Its value for early spring pasture cannot be to highly estimated, Every farmer should devote one or more fields to its growth.

Next in importance we shall mention red-top a species of the bent-grass, sometimes called English grass, and herds' grass. This grass is so well known as to require only brief notice. It is more prolific in its growth than blue-grass, and partakes somewhat of its nature. It grows luxurantly on flat or wet lands, and for meadowing purposes, yields a heavy crop, which makes good feed for cattle. If allowed to grow up after harvest it will afford fine pasture during the winter months, and is relished much better by stock, than hay.

These are the only grasses, possessing the properties of durability, sweetness and freshness at all seasons and that can be recommended for grazing purposes the entire year round.

CHAPTER VII.

The time was, and no very distant period either, when the finest horses on this continent, were to be

found in a few of the Eastern States and Canada. Connecticut was famous in those days for producing the best stock, particularly what might be termed *fast.* Canada took the lead in roadsters, carriage and heavy draught horses, from English stock. Of late years matters in this respect have taken a change, a change brought about, by the enterprize and outlay of large amounts of capital by Western and Southern stock-raisers, who devoted their time and means in visiting points in the Old World noted for its best stock, for which they paid large sums of money. What is the result to-day? The fact is, that the West, aided by Kentucky and Tennessee, are furnishing the principal markets in the United States with horses, many of which bring fabulous prices, because of their high breeding, training and adaptability to the purposes intended. Go to Saratoga, Long Branch, Cape May, and all the places of fashionable resort in the country. At each of these places and in New York, Boston and other cities you will see horses valued at from one thousand to five thousand dollars each, and many for which, even much larger sums would not be accepted. Remember Dexter at one time sold for over $30,000. Why is this? Thirty years ago or less some of the best horses in the West would not bring over, say one hundred an fifty dollars, others not even one-fourth the amount, and they were dear at that. The aggregate value of horses in the United States, is in this year of grace (1872) increased more than ten fold over twenty years ago. No other species of stock has made in proportion so rapid an advance.

Stock raisers of the West, this is a subject worthy of your consideration. It is just as easy to

raise a good animal as a poor one, and believing that you profit by it, we will give you a few hints on "breeding."

The selection of a horse from which to breed, and the purpose for which the offspring is intended, must both be considered. It is a trite adage, that like begets like, and if true, as admitted, it is a self-evident fact, that to have good horses, we must have the best stock to start with. By the term best, we mean not only size, muscular developement, symetry, action, color, temper &c., but the pedigree of ancestry ought to be looked to, and in no case should relationship exist between the dam and sire. This latter is as important in the brute as in the human creation. The matter of breeding in and in, as it is termed, deteroriates the product so rapidly, that in a few years, if persisted in, would run out the best stock in the country. Great care is therefore necessary in this respect. Care should also be taken to have the temper of both animals at the time of copulation in as placid a state as possible. Neither should be handled rashly, fretted or annoyed, for, according to the adage before quoted, the offspring is liable to be of vicious temper, unmanageable and unsafe, if not worthless.

It is a well known fact, that the owners of stallions, from mere avarice to make a few dollars, allow their horses to serve as many mares as they can hunt up in a neighborhood. The offspring of such must consequently be rickety, half-formed, feeble animals, or probably none at all, which would be better. To raise healthy, vigorous strong colts, no horse should be allowed to run to more than a mare every other day. The practice here assigned is why only a few of the colts gotten

by blooded stallions partake of the perfect qualities of the sire. It differs but little as to the excellent condition of the dam, when the productive powers of the horse are exhausted, the progeny will be a failure. We venture the assertion, without fear of successful contradiction, that if our suggestions in this respect are heeded that a more perfect offspring will be the result, and a failure to impregnate of rare occurrance. And in this connection we will state a fact well known to students of physiology, and for the correction of which we can vouch, from an experience of over twenty years, observation, that in the art of copulation, the animal most designs, will beget the sex of the offspring—if the sire, the colt will be a horse, or *vice versa*; so, if the physical powers of the horse are over-taxed as they too frequently are, and the mare warm and ambitious, the progeny in nine cases out of every ten, will be a mare colt. These results are so certain, that the breeder may with almost unerring assurance secure the sex most desired.

But to return more directly to our subject. It is a strange fact, that while the most thrifty farmers will have the best seeds he can procure, yet in breeding, with rare exceptions, and this will apply to all descriptions of farm animal, that any old, broken down, ring-bone, spavined, coarse-haired, ill-spoken horse, provided he is only sleek and fat, will be selected to breed from, because a few dollars will procure his service. This, to say the best of it, is miserable economy. What will the product, if any, be worth?—nothing; which, on the other hand, if three. four, or even five times the amount is paid for the service of a good horse, if

his energies are not over-taxed, the result will be an animal, that will be a credit to his owner, who may well feel a pride in riding or driving him, and for which he can always obtain ready sale and a fair price. Breeding from good stock is always profitable, while the contrary is actual loss.

It is important that mares should be put to the horse at such a time as to have colts come the latter part of April or early in May, when the weather is more pleasant and grass is begining to grow; both the mare and colt will do better than at an earlier season and be confined on dry feed. It is well known to most farmers and stock raisers, that from the time of putting a mare to the horse until she brings forth her offspring, frequently varies. The usual time is eleven months; some will even run a month over, while others produee fully developed foals in ten months. A young mare, or one which has not had a foal the previous year should be put to the horse,

The principle qualities in a mare to constitute a good breeder, are as essential as in the horse. The form of body, length and breadth between the hips and shoulders are important points. A little narrow bodied animal should never be bred from. The reason is obvious, and needs no argument to any man of common sense.

When a mare is dull, of sluggish habit, but possessing all the other good points necessary, she should be put to a horse of more than ordinary ambition and vivacity. This will contract the lack of life in the dam and the product generally possesses a fair degree of life, spirit and action. If on the other hand, the mare is of to lively a disposition, select a horse of mere docile temperament and the

same result is obtained.

It is not desirable in any case, unless the object is to breed small animals to put a mare to an undersized.

The proper age at which a mare may be used for breeding purposes is four years, some stock raisers commenceearlier. Indeed, we have known them even at two, but more frequently at three. This is wrong for the offspring is not only deficient in its mature powers but it generally results in breaking the spirit of the dam, stops her growth, causes her to be dull and stupid and mars her symmetry. As to how long it is advisable that a mare should be kept to breeding, depends much on her health and usual condition, and the number of colts she has had already. If in her early years she has not bred, she will do good service until she is fifteen. We have known some, to produce colt sat even a greater age; while others who have had colts regularly every year for four years up, broke down and became unfit for breeding at eight or nine. When good stock is the object, it is better not to risk a mare, unless very healthy, after she attains her ninth year. When she is known to be in season. Mares that have just had colts, will take the horse again in from eight to nine days, some sooner, according to condition. The most experienced stock men contend that a mare, if attended, after she comes in season to run a few days beyond, is liable to loose her heat; or if she should continue to a period, she becomes reduced by nursing her foal to such a degree, that her powers of conception may become dormant. Thus it will be seen, that it is safer not to let her go at furthest, beyond the tenth or eleventh day from the time of foaling, A

mare often being put to the horse the first time, lest her conception may not be perfect, should attend the horse in nine days there after, when if her heat still continues, she must make regular weekly attendance for not less than three weeks thereafter. Care should be taken during this period to give her only moderate work, as with hard labor or fast driving, she is liable to cast the conception. Running with other horses in a field: where she is liable to be kicked. or to exercise to much, plowing in roots or stony land, subjecting her to sudden jerks, heavy and straining draught, or anything calculated to shock the nervous system, or cause unusual excitement should all be avoided, as fully to cause a casting of the conception, or in more advanced stages miscariage.

When the time of foaling arrives the mare should not be kept in the stable. If the weather is favorable, a dry even pasture, free from logs, stones or deep cuts, is most suitable. In this event of bad weather, around a straw stack, where the ground is dry and has not been too much tramped by other stock, will answer very well. After foaling she acquires care, some nourishing soft food to bring her to milk, and for at least two weeks should not be workd and even then, and after for two months only gently. By this treatment she soon acquires her strength, and the colt becomes vigorous and strong, It is a bad practice and damageing to the colt, to allow it to follow its dam on a hard road. Better far keep it at home in a well enclosed lot, where it can receive no injury. If a colt has been well kept and is healthy and strong, it should not be allowed to run with the mare after it is six months old, some wean at five

months; but we reccommend the larger period. It is best in weaning to keep the mare and colt as much apart as possible, the colt in a well fenced lot, where he can receive no injury, as he will be fretful and uneasy for a few days.

We adopt the opinion of the most experienced stock raisers in the country, that colts should not be stabled in the winter until they are two years old, when it becomes necessary to handle them in order to breaking. It is much better to keep them in a dry pasture having an open shed, well littered to stand in at pleasure and take their feed. No corn should be given to a colt, unless cracked and even little of that. Do not feed harsh dry hay. It should be borne in mind that a colts mouth is very tender and that he cannot masticate such strong stuff. Well saved green hay, with a little oats once a day is very suitable food, and should be given out of a manger raised some three feet or more from the floor, so that he may not have to stoop below the natural elevation of his head to eat. His manger should be rather above, than too low, as it tends much toward forming a good carriage.

CHAPTER, VIII.

GENERAL MANAGEMENT, BREAKING AND TRAINING.

TO THROW A HORSE.

To little care is frequently taken in throwing horses, which often results in injury to the animal. To effect this purpose carefully, observe the following directions, and the work is easily accomplished and with perfect safety. Apparatus—have a circingle made of good strong leather, from two to four inches wide, sewing a buckle to one end. Then rings are to be attached to the circingle in the following manner: First ring is four inches from the buckle; 2d. one inch from the first on the back edge; 3d. six inches from 2d.; this ring is used, to strap the left fore foot too. The fourth ring six inches from third, placed on the back edge. The fifth and sixth are used to bring up and fasten right fore foot, and to draw the horses head around to side; place fifth ring five inches from fourth; sixth three inches from the fifth, next, small ring two inches from sixth on front edge; next eight inches from seventh one the back edge; next nine inches from the eighth; next three inches from ninth on back edge; next one inch from eleventh on back edge. The 2d. and 7th. rings, are attached to front edge and used for bringing the animals head on his side, when performing surgical operations. The first, fourth, eighth, tenth and twelfth are attached to back edge, to fasten both hind feet to when necessary.

Buckle this circingle on your horse; attaching a crooper to ring nine, on the back edge, with a ring sewed on the hips firm. Take the shank end of bitting machine and pass it through six, the ring on right side and ring on crooper. Then have two straps, with buckles sewed on, strap up the left fore

leg to the eighth ring from the buckle. Stand rather back of your horse on the left side and pull the halter shank when he must come down with his back towards you.

Caress the animal by kind words and patting with your hand for a short time, when you have him in position to perform any operation necessary, such as extracting wolf or blind teeth, castrating &c., without danger of his releasing himself.

NEW BITTING MACHINE,

In the first handling of a colt, it is important that all your appliances be perfect, that the animal may not be unnecessarily fretted or even excited. The bitting machine is to be applied, and of all those in use, the following I have found the most simple and effectual:

Take a well twisted cord of either hemp or cotton, about twenty feet long and about as thick as a pencil on one end tie a boler knot, leaving the loop sufficiently large to slip around the under jaw of the horse. Then pass your hand through the loop and catch the cord and pull it through far enough to form a halter; then slip the halter over the head, and the loop around jaw, with the shank toward you. Now throw the headstall back of the mane, near the shoulder, placing it well under the hair, drawing the shank gradually, but firmly, until the animals neck is sufficiently bowed to look graceful. If he submits to this quietly tie a slip knot under the jaw and let him remain in that position for about ten minutes. Should he become fretful, or attempt to rear or throw himself, by a sudden jerk of the

halter shank, loose your slip knot, and let his head down, speaking kindly until he becomes calm, when you can by tightening the cord, again draw his head up as before. By a daily repetition of this course for some time, your colt will soon become sensible of the power of the bit, tractable and easily handled afterwards.

TO LEARN A HORSE TO LEAD BEHIND A VEHICLE.

Many so called trained horses refuse to be led, by a man on another animal or behind a wagon. To train a horse to lead well, adopt the following in his early lessons:

Take the bitting machine named in the previous article, putting it on in the form of a halter, running the shank on the off side and across the loins to the near side, then under the tail, and pass it back across the loins and up through the loop under the tail; then take the shank in your hand, get into a wagon or on a horse and lead right off. The pressure of the cord under the tail and on the nerve of the jaw, causes him to move forward without the slightest resistance.

PULLING ON THE HALTER OR BRIDLE.

Many horses have a practice of pulling on their halter or bridle when tied in the stable, or hitched, when abroad, and thus get loose to the imminent risk of the vehicle to which they are attached, by running off. To the owners of such animals I recommend the following treatment:

Put on the bitting machine as recommended in the preceeding article, treating on the subject of teaching a horse to lead behind a vehicle. Hitch him to a post or tree and let him pull until he stops of his own accord, which will not be very long. If the treatment is not disagreeable, so as to cause him to pull, twitch him up quietly, and make him pull until he is satisfied.

TO TEACH A HORSE TO FOLLOW.

Put on the bitting machine named in the preceeding article, in the form of a halter, taking hold of the shank nearly up to the jaw; stepping a little to one side say, "come here sir," at the same time gently pulling on the shank; then change your position to the opposite side and address him as before, repeating the lesson several times. A roomy barn where there is nothing to attract the animals attention, is the best place to operate in. A few such lessons, given at intervals of leisure will train your horse to perfection.

TO BREAK A HORSE FROM JUMPING FENCES.

No animal gives more trouble to the farmer than a breechy horse, indeed to some, the best fences are no impediment to this roaming wherever they please. To prevent this, adopt the following plan:

Take a strong strap or circingle, with a ring firmly attached, so as to come under the animals belly when fastened around the body. Then take a strong strap with a buckle at each end, first fastening one end around one of the animals fore legs

below the knee; then pass the other end through the ring in the circingle and buckle the other end around the other fore leg in the same manner as the first- Have a second strap of equal length, with a buckle sewed to each end, fasten one end around the hind fetlock, pass the other through the ring under the circingle and fasten to the other fetlock in like manner, when the horse walks, the strap slides to and fro in the ring. This will prevent any horse from jumping, no difference how old an adept he may be in the practice. It will not however, interfere with his traveling over the pasture to obtain food.

TO BREAK HORSES OF KICKING IN HARNESS.

A horse that kicks in harness is most unsafe and should never be used for family purposes until thoroughly cured of this dangerous practice. Many remedies have been tried, but, none have I yet found so efficacious as the following, by which I have cured many "hard cases," some of whom have smashed more buggies than their heads were worth.

Use the circingle described in the foregoing article, and take two strong straps, just of sufficient length, with four rings firmly attached, one to each hind leg at the fetlock; then take a strong rope about six feet long, tie a knot to one end, and run the other through the rings on the hind foot, then draw the rope through the rings of the strap on the other hind foot; draw the rope sufficiently tight to prevent his kicking, but not so much so as to interfere with his walking freely. Knot the

rope so as to fasten it in that position, and cut off any there may be left after the knot is tied. Now take a small strap or cord, fastening one end in the ring of the circingle and the other to the bridle-bit, leaving him room to pull, but in the event of his kicking so tight as to check on the bit. This remedy never fails in the most obstinate cases, when properly applied to break horses after a few lessons.

BREAKING RUNAWAY HORSES.

Next to the kicking horse, the runaway horse is most dreaded; he is always unsafe, never to be relied upon, and especially dangerous when used in buggy or family carriages; the following method of treatment will effectually break any horse of the practice.

Put on the circingle, first attaching a ring on each side opposite the lower part of the horses shoulder. Take two short straps with rings, same as used for kicking horses, and fasten them around the fore legs above the fetlock joint; then procure a rope about twenty-five feet in length; pass each end of the rope through the rings in the circingle and likewise through the rings in the straps on the fore leg, drawing tolerably tight, but giving liberty to walk, tie the ends fast by knotting, so that they will not repass through the rings. Now hitch the runaway to a wagon beside another horse having on the usual check lines which must be held by a second party, another holding to rope before named, which acts as an independent rein. Let the party holding the regular reins order the team on, when should the runaway attempt to run, the

person holding the rope line, by a sudden pull can throw him on his knees, or probably flat on the ground. Let him recover himself, and each time he attempts to run, serve him in like manner. Repeat this treatment, and you will give the most incorrigible runaway a distaste for his bad practice.

TO CURE A HORSE OF BALKING.

The cause ot a horse balking is generally owing to his early training, and is more of his tutor's fault, in loosing his temper, administering harsh treatment, than the animals. A horse will appreciate kindness, by which you gain his confidence and even break him of many vicious habits. A horse that has been badly handled and become a constant balker, must be treated kindly and carefully, when his disposition in this respect may be easily overcome.

Take and old balker and put on him the bitting machine and his harness, rolling the shank of the former to within about two feet of the jaw around your left hand, and with your right grasp firmly his tail winding it around your hand tightly, which places him entirely under your control. While thus holding him, commence pulling with all your strength on his tail, and with such force on the halter shank as may be necessary to swing him each time around, repeating the exercise quick and often until the horse becomes dizzy, which may be ascertained by his actions. Immediately hitch him to a wagon on the off side with a steady horse and drive gently. Should he show any disposition to refuse his work, unhitch and repeat the swinging process. It is better not to load heavy until perfectly cured of his balking propensities.

SUPPOSITIONS ON THE SENSE OF SMELLING.

We might very naturally suppose from the fact of the horse's applying his nose to everything new to him, that he does so for the purpose of smelling these objects. But I believe that it is as much or more for the purpose of feeling, and that he makes use of his nose, or muzzle, (as it is sometimes called,) as we would of our hands; because it is the only organ by which he can touch or feel anything with much susceptibility.

I believe that he invariably makes use of the four sences, seeing, hearing, smelling and feeling, in all of his examinations, of which the sense of feeling is, perhaps, the most important. And I think that in the experiment with the robe, his gradual approach and final touch with his nose, was as much for the purpose of feeling as anything else; his sense of smell being so keen, that it would not be necessary for him to touch his nose against anything in order to get the proper scent; for, it is said, a horse can smell a man the distance of a mile. And, if the scent of the robe was all that was necessary, he could get that several rods off. But, we know from experience that if a horse sees and smells a robe a short distance from him, he is very much frightened (unless he is used to it,) until he touches or feels it with his nose; which is a positive proof that feeling is the controlling sense in this case.

PREVAILING OPINION OF HORSEMEN.

"It is a prevailing opinion among horsemen generally that the sense of smell is the governing sense of the horse. And Faucher, as well as others, have with that view got up recipes of strong smelling oils, etc., to tame the horse, sometimes using the chestnut of his leg, which they dry, grind into powder, and blow into his nostrils. Sometimes using the oil of rhodium organum, etc., that are noted for their strong smell. And sometimes they scent the hand with the sweat from under the arm, or blow their breath into his nostrils, etc., etc. All of which, as far as the scent goes, have no effect whatever in gentling the horse, or conveying any idea to his mind; though the works that accompany these efforts—handling him, touching him about the nose and head, and patting him, as they direct you should, after administering the articles, may, have a very great effect, which they mistake to be the effect of the ingredients used.

Now, reader, can you, or any one else, give one single reason how scent can convey any idea to the horse's mind of what we want him to do? If not, then, of course, strong scents of any kind are of no account in taming the unbroken horse, For everything that we get him to do of his own accord without force, must be accomplished by some means of conveying our ideas to his mind. I say to my horse, "go-'long!" and he goes; "ho!" and he stops; because those two words of which he has learned the meaning by the tap of the whip and the pull of the rein that first accompanied them, convey the two ideas to his mind of go and stop.

Faucher, or no one else, can ever learn the horse

a single thing by means of scent alone.

How long do you suppose a horse would have to stand and smell a bottle of oil before he would learn to bend his keee and make a bow at your bidding, "go yonder and bring my hat," or "come here and lay down?" Thus you see the absurdity of trying to break or tame the horse by means of recipes for articles to smell of, or medicine to give him, of any kind whatever.

The only science that has ever existed in the world relative to breaking horses, that has been of any account, is that true method which takes them in their native state, and improves their intelligence."

POWELL'S SYSTEM OF APPROACHING THE COLT.

But, before we go further, I will give you Willis J. Powell's system of approaching a wild colt, as given by him in a work published in Europe, about the year 1814, on the "Art of taming wild horses." He says, "A horse is gentled by my secret, in from two to sixteen hours." He goes on to say: "Cause your horse to be put in a small yard, stable, or room. If in a stable or room, it ought to be large in order to give him some exercise with the halter before you lead him out. If the horse belongs to that class which only appears to fear man, you must introduce yourself gently into the stable, room, or yard where the horse is. He will naturally run from you, and frequently turn his head from you; but you must walk about extremely slow and softly, so that he can ser you whenever he turns his head towards you, which he never fails to do in a short

time, say in a quarter or half an hour, I never knew one to be much longer without turning towards me.

"At the very moment he turns his head, hold out your left hand towards him, and stand perfectly still, keeping your eyes upon the horse, watching his motions if he makes any. If the horse does not stir for ten or fifteen minutes, advance as slowly as possible, and without making the least noise, always holding out your left hand, without any other ingredient in it, than what nature put in." He says, "I have made use of certain ingredients before people such as the sweat under my arm, etc., to disguise the secret, and many believed that the docility to which the horse arrived in so short a time, was owing to these ingredients; but you see from this explanation that they were of no use whatever. The implicit faith placed in these ingrdients, though innocent of themselves, become 'faith without works.' And thus men remained always in doubt concerning this secret. If the horse makes the least motion when you advance towards him, stop and remain perfectly still until he is quiet. Remain a few minutes in this condition, and then advance again in the same slow and almost imperceptible manner. Take notice, if the horse stirs, stop without changing your position. It is very uncommon for the horse to stir more than once after you begin to advance, yet there are exceptions. He generally keeps his eyes steadfast on you, until you get near enough to touch him on the forehead. When you are thus near him, raise slowly, and by degrees your hand, and let it come in contact with that part just above the nostrils as lightly as possible. If the horse flinches, (as many will) repeat with

great rapidity these light strokes upon the forehead, going a little farther up towards his ears by degrees, and descending with the same rapidity until he will let you handle his forehead all over. Now let the strokes be repeated with more force over all his forehead, descending by lighter strokes to each side of his head, until you can handle that part with equal facility. Then touch in the same light manner, making your hands and fingers play around the lower part of the horse's ears coming down now and then to his forehead, which may be looked upon as the helm that governs all the rest.

"Having succeeded in handling his ears, advance towards the neck, with the same precautions, and in the same manner; observing always to augment the force of the strokes whenever the horse will permit it. Perform the same on both sides of the neck, until he lets you take it in your arms without flinching.

"Proceed in the same progressive manner to the sides, and then to the back of the horse. Every time the horse shows any nervousness return immediately to the forehead as the true standard, patting him with your hands, and from thence rapidly to where you had already arrived, always gaining ground a considerable distance farther on every time this happens. The head, ears, neck and body being thus gentled proceed from the back to the root of the tail.

"This must be managed with dexterity, as a horse is never to be depended on that is skittish about the tail. Let your hand fall lightly and rapidly on that part next to the body a minute or two and then you will begin to give it a slight pull upwards every quarter of a minute. At the same time you

continue this handling of him, augment the force of the strokes, as well as the raising of the tail, until you can raise it and handle it with the greatest ease, which commonly happens in a quarter of an hour in most horses; in others almost immediately, and in some longer. It now remains to handle all his legs; from the tail come back again to the head, handle it well, as likewise the ears, breast, neck, etc., speaking now and then to the horse. Begin by degrees to descend to the legs, always ascending and descending. gaining ground every time you descend until you get to his feet.

"Talk to the horse in Latin, Greek, French, English, or Spanish, or any language you please; but let him hear the sound of your voice, which at the beginning of the operation is not quite so necessary, but which I have always done in making him lift up his feet. Hold up your foot—'Live la pied' —'Alza el pie'—'Aron ton poda,' etc., at the same time lift his with your hand. He soon becomes familiar with the sounds, and will hold up his foot at command. Then proceed to the hind feet and go on in the same manner, and in short time the horse will let you lift them and even take them up in your arms.

"All this operation is no magnetism, no galvanism; it is merely taking away the fear a horse generally has of a man, and familiarizing the animal with his master; as the horse doubtless experiences a certain pleasure from this handling, he will soon become gentle under it, and show a very marked attachment to his keeper."

REMARKS ON POWELL'S TREATMENT HOW TO GOVERN HORSES OF ANY KIND.

These instructions are very good, but not quite sufficient for horses of all kinds, and for haltering and leading the colt. He speaks only on the kind that fear man.

To those who understand the phylosophy of horsemanship, these are the easiest trained; for when we have a horse that is wild and lively, we can train him to our will in a very short time; for they are generally quick to learn, and always ready to obey. But there is another kind that are of a stubborn or vicious disposition, and although they are not wild, and do not require taming, in the sense it is generally understood, they are just as ignorant as a wild horse. if not more so, and need to be learned just as much; and in order to have them obey quickly, it is very necessary that they should be made to fear their masters; for in order to obtain perfect obedience from any horse, we must first have him fear us, for our motto is *fear*, *love and obey*; and we must have the fulfilment of the first two, before we can expect the latter, and it is by our phylosophy of creating fear, love and confidence that we govern to our will every kind of a horse whatever.

Then, in order to take horses as we find them, of all kinds, and to train them to our likings, we will always take with us, when we go into the stable to train a colt, a long switch whip, (whale-bone buggy whips are the best,) with a good silk cracker, so as to cut keen, and make a sharp report, which if handled with dexterity, and rightly applied, accompanied with a sharp fierce, word, will be suffi-

cient to enliven the spirits of any horse. With this whip in your right hand with the lash pointing backward, enter the stable alone. It is a great disadvantage, in training a horse to have any one in the stable with you; you should be entirely alone, so as to have nothing but yourself to attract his attention. If he is wild you will soon see him on the opposite side of the stable from you; and now is the time to use a little judgment. I would not want, for myself, more than a half or three-quarters of an hour to handle any colt, and have him running about in the stable after me; though I would advise a new beginner to take more time, and not be in too much of a hurry. If you have but one colt to gentle, and are not particular about the length of time you spend, and have not had any experience in handling colts, I would advise you to take Mr. Powell's method at first, till you gentle him, which he says, takes from two to six hours."

HORSE TALK.

If you desire your horse to answer "yes" or "no" by a nod or shake of the head, proceed as follows:

Take a sharp pin or needle between your finger and thumb, and when you desire him to respond "yes" to some interrogatory, prick him slily low down on the breast, and he will knod his head, you repeating audibly "yes." When you desire him to say "no," prick him on the withers, you repeating in the same manner "no." By frequent repetition of this practice, your horse will soon learn to nod in response to "yes" or shake his head at "no."

CHAPTER IX.

POINTS OF THE HORSE.

The following cuts intended to represent the points of horses, and fix in the mind a correct model by which to obtain a knowledge of their good qualities, with the accompanying description of the cuts and comments upon the same; we copy from Wells & Fowler's admirable work on domestic animals.

"Every one who has anything to do with the horse should know something of the 'points' by means of which a good animal is distinguished from a bad one. It is necessary to understand this, no matter for what particular service the horse may be required; and the qualities indicated by these points are universal in all breeds.

"To illustrate this subject and teach the uninstructed how to correctly judge the horse, we introduce the accompanying lettered outlines.

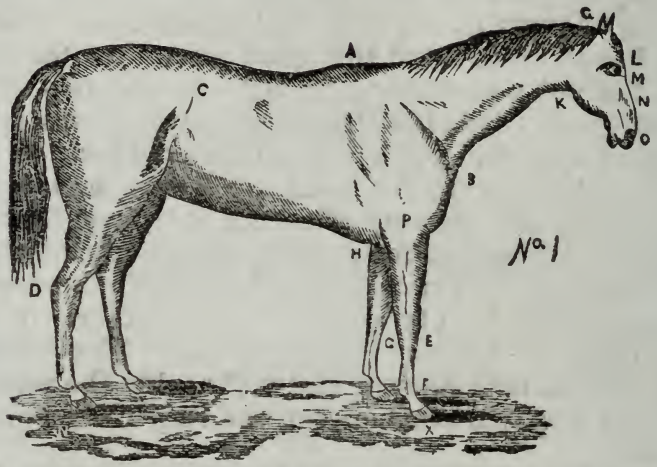
"It is evident that to be a good judge of a horse, one must have in his memory a model by which to try all that may be presented to his criticism and judgment.

"Fig 1 represents such a model. It is a thorough-bred horse, in which the artist has endeavored to avoid every fault. Fig. 2 is designed to represent

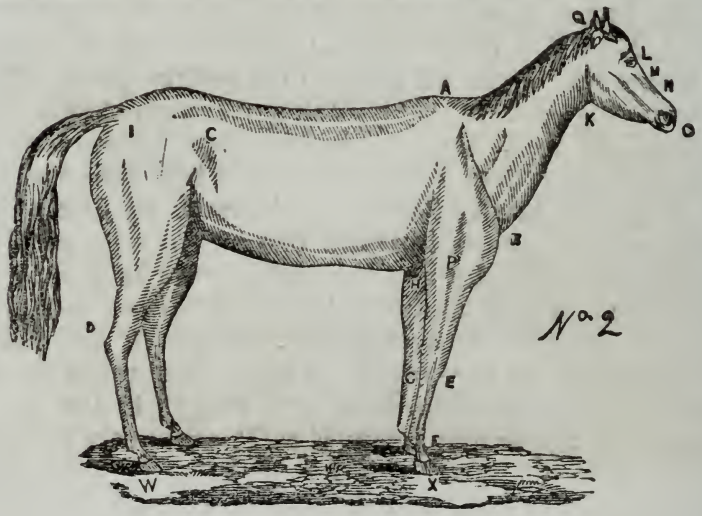
a horse in which every good point is suppressed. It may not be common to see a horse totally destitute of every good point; but injudicious breeding has so obliterated the good one, that the cut fig. 2 is not a caricature, though we confess that its original is little less than a caricature on the true ideal of a horse. Such a head is common, so is such a shoulder, such a back, quarters, and legs; and if they are not very often all combined in one animal, they are, unfortunately, often found distributed among the common breeds in such abundance as to mar the beauty and the service of three quarters of all the horses in ordinary use. The letters are alike in both figures, and will enable the reader to draw a comparison between the respective points of each.

"The most important part of all is probably the direction of the shoulder, from A to B. Next to this, the length from the hip to the hock, C to D. The point which next to these probably most contributes to speed and easy going, is the shortness of the canon bone between the knee and the pastern joint, E to F, a point without which no leg is good. A horse which has all these three points good will necessarily and infallibly stand over a great deal of ground, W to X, that is, the distance between his fore and hind feet will be great; while one which is deficient in all of them, or indeed, in the two first, will as assuredly stand like a goat with all its feet gathered under him, and will never be either a fast horse or safe under saddle. A horse, not in motion, may be more speedily judged of by this feature than by any other. One consequence of a fine receding shoulder is to give length in the humerus, or upper arm, from B to P, without which a

great stride can hardly be attained, but which will



seldom if ever be found wanting if the shoulder-blade be well placed. A prominent and fleshy chest is admired by some, probably because they think it indicative of powerful lungs and room for their use. We object to it as adding to what is de-



sirable to avoid—the weight to be lifted forward in the act of progression—while all the space the lungs require is to be obtained by depth instead of breadth, as from A to H, in which point, if a horse be defficient, he will seldom be fit for fast work. The other points which we have marked for comparison are G to E, or the width of the leg immediately below the knee, which in a well-formed leg will be equal all the way down; in a bad one it will be narrowish immediately below the knee, or what is called 'tied in.' The shape of the neck is more important than might at first thought be supposed, as affecting both the wind and the handiness of the mouth; no horse with a faulty neck and a head ill-attached to it, as at Q to K in fig. 2, ever possesses a good or manageable mouth. The points of the face are not without significance, a feebly developed countenance generally showing weakness of courage if not of constitution. We therefore like to see a large and bony protuberance above the eye, as at L in fig. 1, giving the appearance of a sinking immediately below, followed by a slightly Roman or protruding inclination toward the nose. These when present are generally signs of 'blood,' which is in some proportion or other a quality without which no breed of horses will ever improve or long entitle itself to rank as other than a race of drudges, fit only for sand or manure carts.

"Bearing these points in mind, you may, by observing and comparing the different animals which fall under your eyes, soon qualify yourself to give an intelligent opinion of a horse. One cannot become perfect in this branch of knowledge in a week or in a year. Certainly no careful student of this little book will allow himself to be imposed upon

in the purchase of an animal having many of the bad points represented in fig. 2. The perfect horse (fig. 1) you will not expect to meet every day.

A badly formed horse is not profitable for any purpose; because, if so formed, they are either clumsy, inactive, dull in mind, or tender and easily broken down. It costs just as much to breed, raise, and keep a poor horse as a good one, and the poor one is low in value and unsalable: besides, he is unable to do good service in any sphere, or to endure.

"We copy from Lavater six heads of horses, which indicate different temperaments and a great diversity of character and disposition.

fig. 3.

"fig. 3 has a slow, heavy temperament; is without spirit, awkward in motion, lazy, stupid in intellect, difficult to teach, bears the whip and needs it. though it is soon forgotten. He is too lazy to hold up his ears or under lip, and is a regular bog-necked, heavy-footed animal.

fig. 4.

"fig. 4 has more intelligence and spirit, a more active temperament, and is disposed to anger, will not bear the whip, and shows his anger, when teased or irritated, in a bold direct onset with the teeth.

"fig. 5 is a very active temperament; is a quick, keen, active, intelligent animal, but is sly, cunning,

mischievous, and trickish; will be hard to catch in the field, inclined to slip the bridle, will be a great shirk in double harness, and will require a sharp eye and steady hand to drive him, and will want something besides a frolicsome boy for a master.

fig. 5.

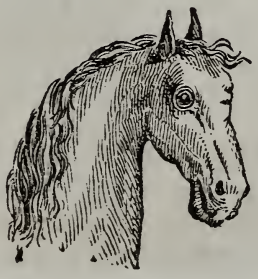
fig. 6

"Fig. 6 is obstinate, headstrong, easily irritated, deceitful, and savage; will be hard to drive, unhandy, unyielding, sour-tempered, bad to back, inclined to balk, disposed to fight and crowd his mate, and bite and kick his driver.

"fig 7 has a noble, proud disposition, and a lofty, stately carriage, but he is timid, restive, and easily irritated and thrown off his mental balance. Such horses should be used by steady, calm men, and on roads and in business which have little variety, change, or means of excitement.

fig. 7.

fig. 8.



"Fig. 8 is a calm, self-possessed animal, with a noble, elevated disposition, trustworthy, courageous good-tempered, well adapted to family use, but not remarkable for sharpness of mind or activity of body.

fig. 9.

"Figs. 9 and 10 show a great contrast in shape of head, expression of countenance, temperament, disposition, and intelligence. The first is a most noble animal.

"Fig 9 is broad between the eyes, full, rounded, and prominent in the forehead, indicating benevolence and intellect; broad between the ears, showing courage; broad between the eyes, evincing quickness of perception, memory, and capacity to learn. He can be taught almost anything, can be trusted, and loves and trusts man; is not timid, will go anywhere, and stand without fastening; never kicks, bites, or runs away.

fig. 10.

"Fig. 10 shows a marked contrast with fig. 9 in almost every respect; his narrow and contracted forehead shows a lack of intelligence, kind-

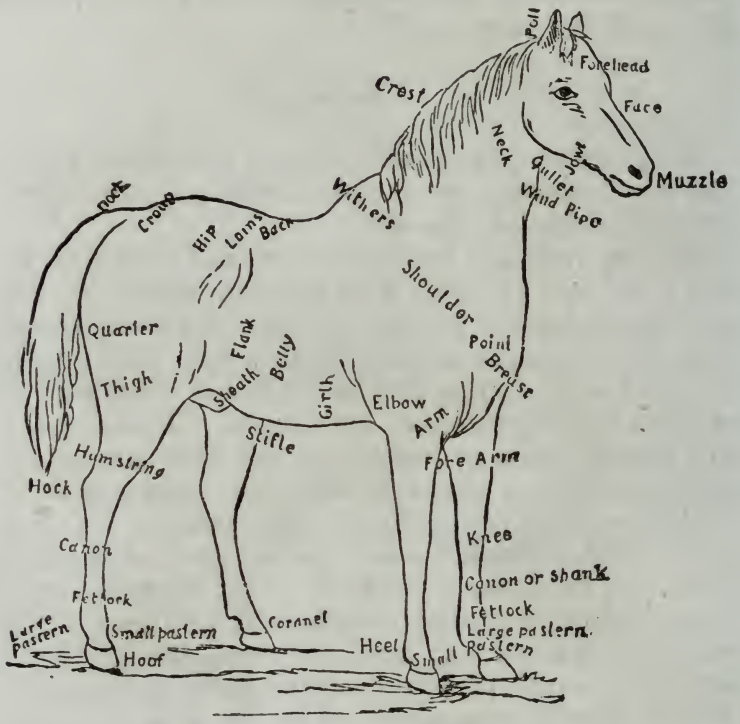
ness, and tractability; is timid and shy in harness, vicious, unfriendly, disposed to kick, bite, balk, or run away, and is fit only for a mill or horse-boat. For all general uses he should be avoided, and by no means should such an organization be employed for breeding purposes."

COLOR.

W. C. Spooner, author of several veterinary works, has the following remarks on color as a sign of other qualities in the horse:

"We have found both good and bad horses of every color, and the only rule we can admit as correct is, that certain colors denote deficient breeding, and therefore such animal is not likely to be so good as he looks, but is probably deficient in bottom or the powers of endurance. These colors are black, which prevails so much with cart-horses, and sorrel, dun, piebald, etc.; the possessors of which come from the North, and possess no Eastern blood. Black horses, unless evidently high bred, are very often soft and sluggish, with breeding insufficient for their work; the pedigree of the majority of them may be dated from the plow-tail, whatever admixtures there may have been since. White hair denotes a thin skin, which is objectionable when it prevails on the legs of horses, as such animals are more disposed to swelled legs and cracked heels than others. Bay horses with black legs are greatly esteemed, yet we have known many determined slugs of this hue. Their constitution is however, almost invariably good. Chestnut is the prevailing color with our race-horses, and consequently chestnut horses are generally

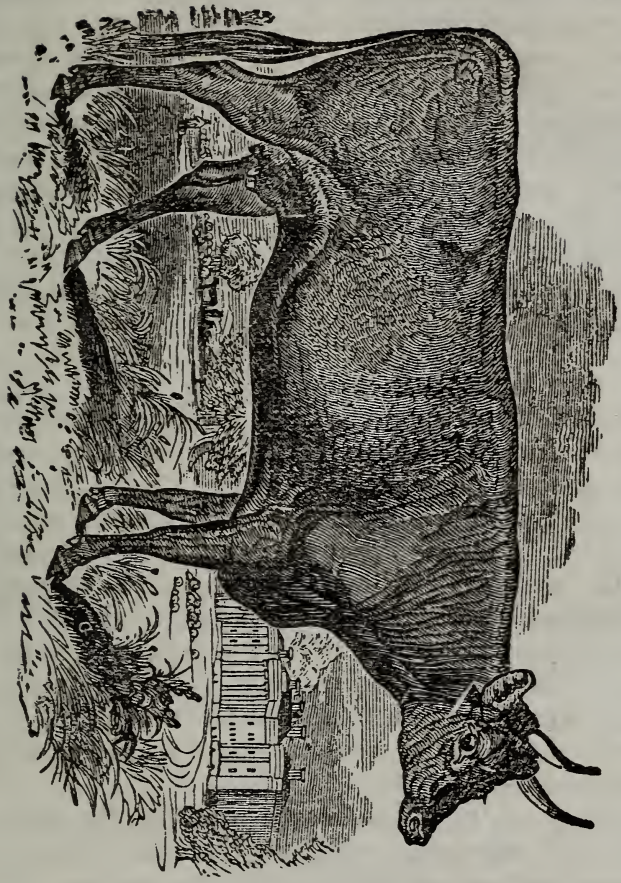
pretty well bred, and possess the good and bad qualities which obtain most among thorough-breds. The Suffolk cart-horse is also distinguished by his



COMMON TERMS DENOTING THE PARTS OF A HORSE.

light chestnut color; and it is no recommendation to find that this breed has, for several years past, carried away the principal prizes at the annual shows of the Royal Agricultural Society of England. Gray is a very good color, and generally denotes a considerable admixture of Eastern blood."

CHAPTER X.



CATTLE.

Among the many developments of our domestic commerce, none stand higher in importance than cattle raising in this country. In the supply of animal food by the United States to the large communities of the old world, beef comprises a large

part. Even from our own continent, especially the older settled portions, the demand on the Great West, as is evident every day by the immense trains laden with stock, passing eastward over our principal railroads; and should prices continue to reward the stock raisers, as within the past ten years, ending in December 1871, the energies of our farmers will be fully taxed to supply the demand for this article of animal food. Notwithstanding this constantly increasing demand, we find that the supply has not kept pace with it in the West. In the States of Ohio, Indiana, Michigan and Wisconsin according to recent statistics the number of cattle is not greater than four to one of the population. Illinois is an exception, rating somewhat higher; while Texas, since the building of the Pacific Railroad, opening an access of trade in this great product of her vast prairies to the markets of the East, the stock of cattle is estimated at four to one of the population. Texas shipped northwest in 1870, two hundred and thirty-two thousand head of beef cattle. The enormous number were from the Northern and Central parts of the State, while a vast number in addition were shipped by sea.

The farmers of the North-west, to compete with the vast resources of Texas cattle-raisers, when land is cheap and fertile, and the severity of either unknown—green pasture being abundant at all seasons, must secure more valuable breeds of stock. They must select animals which, with the same average of summer pasture and the same amount of winter feeding, will yield beef in greater quantity, of finer quality, and of higher market value.

The more intelligent cattle-raiser in the older

states have already anticipated this necessity, by replacing their common stocks with improved breeds; and so apparent is it that the North-west must follow the example in order to keep pace with the increasing wealth and progressive civilization, which is accumulating and diffusing itself through more numerous classes of society, creating a demand for better food. Thus much as to cattle generally, and the importance of improved breeds, we shall devote a few pages on the disease to which they are subject, their care, breeding, etc., commencing with

THE COW.

The Cow, especially young cows, in condition at the time of calving are very subject to a disease called *gout*, a downfall of the udder. The complaint is generally noticed by a swelling and hardness of the part attended with fever and pain, when pressed. Secretion of the milk is apt to result, and when drawn, is often accompanied by blood or completed matter. Frequently the supply of milk entirely ceases, when suppuration is certain to follow. In many cases we have known the hard limbs to become swollen and inflamed, reaching from the hip to the foot. In this condition they are apt to get down, with an inability to rise again.

When the symptoms are at first discovered, bleeding should be resorted to, taking in quantity, according to the strength of the animal. In twelve hours after bleeding, the following may be given as a purgative.

Gentian root powdered, half ounce; ginger, powdered one drachm, Salts, two ounces. Mix with

a pint of warm gruel and administer as a drench. Repeat in twelve hours.

Keep the cow on spare diet. Bran or corn-meal warm mashes, with but little hay, will suffice for a few days.

In most cases the udder becomes very sore, and when in that condition, should be rubbed with an ointment composed as follows:

One pound of soft soap, two ounces of mercurial ointment, one ounce of camphor, grated with half an ounce of spirits of wine. Blend well together and rub carefully the affected part, always after milking until a cure is perfected. Care should be taken to wash the ointment off well with warm water before milking. In order to keep the bowels open and prevent fever or inflammation, continue the mashes twice each day until entirely well, also applying the ointment if necessary. If the natural appearance of the udder is not restored by the foregoing remedies, and it continues swollen, hard and sore, a close examination will become necessary, to ascertain whether corrupted matter has not formed within, in which event, open a slight incision with a sharp pen-knife, and encourage the discharge by occasional fomentations with warm water. Do not cut the teat cross-wise, but downward. It will heal readily. Death sometimes ensues from mortification.

WEEDS.

This complaint in fresh calved cows is frequent, and is the result sometimes of an overflow of milk, or bad milking. The animal is taken with fits of fever and shivering, hanging her head and having

a general dull appearance, refusing food, the udder hot and swollen. Prompt measures are necessary or an abscess is certain to form, keep the bowels open to prevent inflammation and reduce fever. Foment the udder with warm water frequently, and rub with a mixture of hartshorn and oil—equal parts. If the shivering continues, have her covered with a warm blanket.

The following, administered as a drench, frequently effects speedy cure:

Powered ginger, half ounce; crawayseed, six drams; alspice, half ounce. Mix in quart of warm water.

SORE TEATS.

This disease is of frequent occurrence, most generally after calving, rendering the cow very difficult and unpleasant to milk, by the discharge of matter from the cracks, passing through the hands and into the milk. The following will be found an effectual remedy:

Two ounces of Beeswax, one ounce of Sugar of lead, one ounce of alum and six ounces of elder ointment. Place over a fire and stir until well mixed.

Apply when cold by rubbing the teats each time after milking wash in warm water and castile soap before.

PARTURITION.

The process of calving is usually performed without difficulty; sometimes, however, cross presentations take place, and sometimes a constriction of

parts prevents the natural passage of the calf To act properly on these occasions, great patience is required and much mildness; many cows have been lost by brutal pulling; we have seen all of the men and boys of a farm mustered to pull at a rope affixed about a calf, partly protruded, which, when it was thus brought away, was forced to be killed, and the mother soon died also, from the protrusion of parts this brutal force brought with the calf.

RELIEF.

Mares and Cows frequently die in course of parturition, when timely aid would save their lives. In hundreds of cases in which I have operated I have never yet lost an animal. The difficulties in their bringing forth their young are numerous, some from the dam being to highly fed, others owing to weakness, from lack of sufficient nourishment. The latter is the most prevalent.

In most cases the young are to weak to turn themselves, as nature intended, they should, to come forth with ease. In all such cases there is but one remedy, in which two stout men must act as accoucheurs. They should stand the animal, one having greased his right hand and arm with lard, the other his left, and standing so that the greased arms come together. In this position they force their arms gently into the vagina and discover the posture of the young. It so happens that the head is turned wrong side up, or remains back on its side, or the knees remain stiff so they will not straighten, as nature intended.

Thus when labor and pain comes on, the young lodges against the Pelvis bone. Care should be

taken not to scratch with the nails. Its proper position is head foremost and back upwards. The legs should be straight forward, being careful that they are under part of the head and not crossed above the neck. Then straighten the head. After the dam has rested a few minutes you can gradually pull and assist when labor is on until the young is romoved. After a few minutes you may remove the calf-bed by holding the outer part with one hand and introducing the other hand gradually loosening the internal parts from the folds, being careful not to scratch with your nails; then grease internally by mixing the bulk of a hazlenut of golden seal with a spoonful of lard, Warm drink made of meal partly browned or scorched may be given with good effect.

RETENTION OF AFTER BIRTH.

It sometimes happens that this is retained, being attached between folds or lapped around false dogs. Treat according to instructions given above.

CASTING THE FUNDAMENT.

It frequently occurs, that mares in good condition, while with foal get foundered. In such cases inflammation of the uterus or womb frequently takes place, involving the organs of generation and in some instances, the kidney and bladder, causing intense heat of the parts, which may be felt in the rectum. The uterus becomes swollen and inflamed, producing what is termed "falling of the womb," and the hinder parts become swollen, protrude and hang out endangering the life of the an-

imal. The cause of this is feeding rotten, mouldy fodder or straw, or rotton mouldy corn or oats. With the following treatment I have met with marked success and most heartily recommend its use.

Take a small bundle of willow sprouts, dry them well, burn them to ashes and run them through a fine sieve. Wash the fundament well with castile-soap and warm water, then sprinkle on the willow ashes and turn the fundament back. Tie the tail of the cow or mare as the case may be, fast under the belly to a circingle, or take a block of wood, bore two holes in it, one on each side, fasten it under the tail by tying two ropes in it, one on each side, then fasten it to the circingle. Let it remain in this position for three or four hours.

A GERMAN CURE FOR THE SAME.

A beefs morrow bone burnt in the fire and beaten into fine powder is a good dryer and healer, and will cause a new skin to form on any wound, when sprinkled on as the case requires.

AN INDIAN CURE.

In my practice I have thoroughly tested the following and found it reliable.

1 teaspoonful of golden-seal; 1 teaspoonful of gentian. Mix with four ounces of lard. Grease the fundament well before turning. Give freely of the cleansing powders to regulate the blood and liver.

INDIAN VEGETABLE CANCER CURE.

It may appear presumptious in a man of my humble abilities to meddle in a matter in which learned surgeons, in the different parts of the world so widely differ, and in which almost all fail to effect a cure, of that dreadful malady to the human family known as cancers. However, I enter the field of competition, being satisfied that in nine cases out of every ten, the following remedy, if applied in time, and the preparation made according to my directions, that it will have the desired result. I am thus confident, knowing at this time of over fifty cures being effected by its application.

Take a large bunch of sour sheep sorrel, wash, put into a clean linen towel and bruise thoroughly; then squeeze out the juice with a pair of clamps, letting it drop on a piece of new zinc. Set the zinc in a shady place until the juice dries to the consistency of a salve, then scrape off and put in a vial for use. Spread the salve thinly on a piece of fine linen, and apply to the part affected twice a day.

In a short time the cancer will be seen to separate from the healthy flesh, but continue the plaster until it comes out by the root. Then apply a salve composed as follows:

Sheep suet, 2 ounces; fresh butter, 2 ounces; golden seal, ¼ oz.; eyebright, ¼ oz; mix well, melt over a slow fire, then strain through a cloth, and it is fit for use. Apply twice a day.

GERMAN VEGETABLE CURE.

This is one of the best caustics I ever made use of for all deep seated ulcers, such as Fistulas or a

necrosis of the bone. It causes speedy suppuration, removes proud flesh and all Fungal Tumors, Warts, Cancers, &c.

I have cured several cancers, on the vagina of cattle with the following:

Peel 3 bushels of bark as follows; 1 of black oak, 1 of swamp ash, 1 of black hickory; dry the bark in the shade, then burn it to ashes in a large kettle; add soft water and boil 15 minutes; then leach and settle carefully, after which boil down slowly, until thick, then remove part of the fire and dry down slowly to potash; put in a closely stopped jar for use.

HORN DISTEMPER, OR HOLLOW HORN.

A disorder incident to horned cattle, by which the internal substance of the horn, (commonly called the pith, which is the spongy part of the bone) wastes away, &c. This disorder may be known by a dullness in the countenance, a sluggish motion, want of appetite, a desire to lie down frequently, shake their head and appear dizzy, &c. To be sure of this disease, take a small gimblet and perforate the horn two or three inches above the head; if it is hollow and no blood follows, it is the hollow horn. This distemper is generally brought on by poverty.

Treatment.—Bore the horn at the upper and lower side that the drain may have vent, and administer at least two or three doses of salts or some gentle purgative; inject into the horn strong vinegar and camphorated spirits of salt and vinegar; this will cleanse the horn and effect a cure.

BLOAT.

This arises from different causes, cattle are subject to a flatulent colic, which is not unlike that of the horse, costiveness or bloat and red-colic, which in them is called glue-bound, forubel bound, or clover bound. Too free feeding on clover or green corn, is liable to produce bloat in cattle and if not promptly relieved, frequently die. It is not safe in such cases to wait the tardy action of medicine. Therefore, stabbing which should be performed skillfully and promptly is always preferable. To perform this, take a sharp pointed butcher knife and make the incision about six inches deep in the thin skin between the lower part of the hip bone and the last rib. Here the knife will enter where the Paunch is attached and where there is no muscles to sever, where the acids will escape giving instant relief.

TREATMENT.—Feed dry light feed, and plenty of Cleansing Powders in a little bran or slop.

INFLAMMATION, OR RED COLIC.

This is by no means unknown in cattle Pathology; the symptoms of which do not differ from those common to the horse, and the treatment also, is in every respect the same.

INFLAMMATION OF THE LIVER, OR HOT YELLOWS,

sometimes occur, in which case, in addition to the symptoms detailed under hipatitis in the horse there is, from the presence of systic bile in the ox, a more determined yellowishness of the eyelids,

mouth, and nostrils. The treatment must be similar.

TREMBLES, OR MILK SICKNESS.

This is one of the most fearful of all diseases with which the cow or horse may be affected.

Its effects on the horses and cattle are equally alike. The milk or butter from a cow that has the trembles, causes sick stomach in those who partake of it, with severe vomiting and unless speedy relief is afforded much may prove fatal. In my long train of practice I have been called to treat hundreds of cases of this kind in the quadruped, and I am happy to be able to submit to the world the only successful remedy. In all such cases the stomach becomes surcharged with morbific agents, generated in the body by eating grass or drinking water that becomes vitiated by deleterious matter floating in the air; settling down on the vegetable or waters, poisoning them and when taken into the stomach, produces this trembling or vomiting, bringing about a derangement of the circulatory and nervous systems. The animal hangs its head; drops its ears, and shows symptoms of acute fever.

Treatment.—I have cured hundreds of cases with the following:

4 ozs. of sweet oil or castor oil; 1 pt. of lard melted, add 10 drops of croton oil, and drench or give 4 drachms of calomel with the above omitting the croton oil, repeat every three hours until you get evacuation, then all is right.

MISCELLANEOUS.

It is stated that for several years past, there has been a great loss of cattle in the mountains of New Hampshire, from some unknown form of disease; the cattle are generally found dead, some few cases similar to this have appeared in Massachusetts, and the cattle have died from eating too much smut corn. (Pleuro Pneumonia has been very fatal for the past twelve years. Since vaccination has been practiced the loss has gradually diminished.) I find a new disease prevails among milch cows in Frie county New York, and elsewhere. Symptoms —watery eyes, yellow water running from the intestines, cramps; resulting in death in from 12 to 18 hours. A few cases have been saved by giving calomel in doses of from 15 to 20 grins in cold water once in three or four hours, followed by 4 ozs. of sweet oil or castor oil until you produce evacuation.

It is a remarkable fact that in many districts where diseases among horses and cattle have been so destructive, during the last few years it has almost entirely disappeared. The principle remedy applied appears to have been a complete renovation of barns and stables, good ventilation with a free use of lime in the stalls and a regular healthy diet.

MILK FEVER,

may be first noticed in a cow, sometimes before parturition, but most generally in a short time afterwards. Its symptoms are, refusing food, protrusion of the eye, dull look, heaving of the flanks, with general restlessness and feverish appearance. In this stage of the disease, if prompt remedies are

not applied, the animal becomes weak and unable to walk without staggering, the eye glassy, the pupils dilated; her hind legs, from the hips down paralyzed, and in this condition is liable to fall, never to rise again, It is known in some sections of the country as the *dropping* complaint.

It is found that there are two varieties of this disease, one more severe than the other. In the former, the spinal column is affected, delirium appearing to extend to the brain; thus the staggering gait and wildness of look. In this condition she becomes unable to discharge either water or the contents of the bowels.

In both mild and most severe forms of this disease, it has been ascertained by *post mortem* examination that the stomach is loaded with hard, dry indigestible matter, and much inflamed. When the secretions of milk has ceased, the case may be considered hopeless.

If the animal appears lively, the eye clear, with a strong pulse, she might be bled with good results; the quantity of blood taken to depend on her strength, say from two to four quarts. The great hope however of cure is in cleansing out the stomach by powerful purgatives, contnue at intervals until relieved.

We have found the following most efficacious in these cases:

Dissolve in warm water, one pound of salts, five ounces of flour of sulphur; six drachms of ground ginger, one ounce of spirits of ether; administer in three doses, about six hours apart.

If the case exhibits the symptoms of the severe type of the disease, add to the above ten drops of castor oil and one pint of lard in the first dose. If

this does not produce action on the bowels within reasonable time, injections should be given to counteract the torpor of the stomach.

If the animal survives forty-eight hours, the prospect is favorable for recovery. During her sickness, the cow should be carefully nursed, kept comfortably warm and dry, with good bedding, her fore quarters well raised, and give her warm gruel as often as she will eat it.

THE BLAIN.

This disease is most prevalent in Summer, and among cattle in high condition. Its symptoms are dullness, red, inflamed and watery eyes, heaving of the sides and costiveness. These indications should be tested by prompt examination of the throat, where, at the root of the tongue, if the evidences prove correct, will be found a number of small pustules or blisters, which increases in size rapidly from inflammation, causing a closing of the wind-pipe and consequent inward into strangulation.

The nature of this disease demands prompt attention. If allowed to run for a day, death may ensue. Many remedies have been resorted to, all tending to the one object—to break the blisters, but the simplest is with a penknife, to cut each and let the glutinous and bloody matter, with which they are filled escape. Should the tongue have become swollen, the operation may be difficult to perform. In such cases the entire head is feverish, and bleeding in the jaw should be resorted to, and the mouth and tongue swabbed with a mixture composed, in proportion, of one drachm of chloride

of lime to one quart of water. If necessary repeat. If the cutting has caused sores which do not heal rapidly, swab with a decoction of tincture of myrrh, golden seal and water.

In this, as in all cases, in which fever intervenes, care should be taken to keep the bowels free.

In extreme and neglected cases, the stomach of the animal and the approach to the gullet, becomes so swollen as to render it impossible to administer medicine, or the animal to partake of food. In such cases, we recommend the use of a piece of half inch india-rubber passed below the wind-pipe, by which, with the use of a funnel, both food and medicine may be given. If a small pump can be attached, so much the better. Every farmer should have an apparatus of this kind. It is easy of construction, very simple and costs but a trifle.

THE BLOOD, OR BLOODY MURRAIN.

The symptoms of this disease are high fever, costiveness, dullness, restleness, etc., as decided in the preceeding cases, with the exception, that the evacuations from the bowels, are high colored and mixed with blood, we believe it to be more prevalent in new countries, rich and uncultivated soils, yielding a luxuriant growth of grass, than in the older states.

In Ohio and other Western states some thirty years ago, almost entire herds were carried off by its fatal ravages. It was generally confined to young animals in good condition, and most frequently in Summer, when grass was most luxuriant. We have known it to be very fatal even a-

mong old cattle, while stall feeding at other seasons of the year. Its attacks are sometimes very common on cattle removed from poor farms to those yielding a profusion of nutricious and stimulating herbage. Some farmers attribute its causes to the rapid spring of verdure in the early summer, after a severe winter with scant feed. Its ravages were very fatal in England over one hundred and fifty years ago when 70,000 head of cattle died from it in one year, and the first account we have of it in this country, was in 1768. A celebrated physician of that day in describing its virulence and fatal effects, says, "The disease was epidemic. It depended on some atmospheric influence which we are unable to understand; but at the same time it was contagious, and that to a very great degree. If it once appeared on a farm, almost all the cattle were sure to be affected; yet it was ascertained that the power of infection did not extend more than a few yards; and that a fence alone often separated the dead from the living. The murrain seemed mostly confined to cattle, for horses and sheep, and swine and dogs, lived in the midst of the infection and escaped, and even some neat cattle seemed to possess a security from infection."

We fortunately of late years know little of this terrible scourge in the United States, and should we ever be visited by it again, Veterinary science has made rapid progress, and its students attained such skill in their profession, that there is reason for hope that its virulence would be confined to comparatively small loss.

The first effort in attempting to effect a cure, should be to abate the fever and produce action on the bowels. Blood should be drianed freely, and

in quantity as the strength of the animal will admit. If the blood flows easily and is of natural color, the prospect of recovery is good.

In most cases of this kind, the greatest difficulty is in causing a discharge from the bowels, and the most effective agent we have ever tried to bring about this desirable result, was one pound of salts, one ounce of salt peter, well dissolved and given in two quarts of warm meal and water. In four hours after give one pint of linseed oil, and again in two hours another pint of oil, continuing the oil until the bowels freely discharge.

We have cured some cases of murrain, exhibiting all the worst symptoms of the disease by these simple remedies and have no fear of the result when taken in time. If the disease is arrested, the animal should be fed for some days on soft food, bran or corn meal mashes etc., until the stomach has regained its former strength and disuse for the accustomed aliment.

INFLAMMATION OF THE BLADDER,

is of two kinds, of the bladder proper and of the neck of the bladder, the former caused by eatied noxious weeds and the latter, sometimes from colds and eating acid herbs.

Inflammation in the neck of the bladder causes such a revolting of the pats as to render passage of the urine almost impossible, while the desire to do so is evinced by constant effort, apparently giving great pain to the animal. The symptoms in such attacks are, loss of appetite, quick pulse, constant straining and heaving of the flanks. The best remedy in the case of inflammation of the neck of the

bladder is if possible to remove, which sometimes can be done by copious bleeding to lower the system. Should this fail to produce the desired result, the catheter must be resorted to, and the operation should be performed by a skillful Veterinary Surgeon. With a cow it is easily accomplished; but in an ox, from the curvature of the penis, it is a difficult matter. Some Surgeons slit open the uretha behind the bag, and so pass the instrument into the bladder, while others puncture the bladder through the rectum, and some through the belly; but all of these systems to give relief are objectionable and may terminate fatlly.

A more effectual and simple way in the case of an ox is, to introduce the hand into the rectum and with a gentle pressure on the bladder, the contents may be forced out without danger.

In cases of inflammation of the bladder proper, the animal should be bled and purged; but no medicine to act on the kidneys given.

The following may be administered with good effect:

Antimonial powder, 2 drachms; powdered opium, one scruple; blend well together and mix with a quart of gruel, repeating the dose twice a day until the urine passes freely.

STONE IN THE BLADDER.

This is a common disease in cattle, more particularly in the ox, because of the smallness and curved form of the uretha, causing the detention of solid matter, little sand and gravel taken in while grazing.

The symptoms of stone, are a frequent turning of

the head to the flank, a trembling of the hind limbs, and an effort to urinate.

The removal of stone from the bladder is a very difficult matter and can only be accomplished by a skillful Veterinary Surgeon well versed in the anatomy of cattle, and even with such assistance the result would be doubtful. On discovering the actual presence of stone, if the animal is in good condition, the best plan to save expences and loss, is to slaughter him at once, as no medicine will dissolve it.

DISEASES OF THE EYE.

Opthalmia, so prevalent in other animals is of rare occurrence in neat cattle. The ox, however, is subject to injuries in the eye, and in such cases, of a more serious character, bathing, fomentations and cooling medicine will effect a cure.

Oxen are also subject to tumors, and often bony excresences about the orbit, or the bone around the eye, which only can be removed by the use of the knife, and even then, not permanently, as they sometimes, like warts are apt to grow out again if not properly treated. In case of soreness of the eyelid, which, not only looks bad, but is a great source of annoyance, a solution of white vitril, one drachm to a pint of rain water, scarcely fails to effect a cure. In more intricate cases, the nitrated ointment of quick silver, applied to the part without touching the eye, will have the desired effect. Warts may be cut off with a knife, immediately applying a little lunar caustic to the part, which prevents them coming again.

When the horse receives dust, or even small

particles of gravel in the eye. Nature has provided him with the means of getting rid of it first by wiping the surface with the haw, a small gristly substance, growing under the nether eyelid and washing with his tears. The haw not being so prominent in the ox, he frequently suffers much from these causes and often blindness ensues. Excressences of fungour growth often appear on the eyelid, which in time, if neglected, cover the entire vision, causing intense inflammation and total blindness speedily follows. In the several cases named bleeding from the jugular vein, is generally resorted to wtih good results. A dose of Cleansing Powders every other day for a week, with occasional fomentations, and bathing the eye with a lotion, composed of the following ingredients:

Extract of goulard, spirituous tincture of digitalis, and tincture of opium, two drachms, mixed in a pint of rain water. In more inveterate or chronic cases, white vitrol, one scruple, spirits of wine, one drachm, mixed in soft water and applied as before in most instances prove effective.

Should inflammation and the fungous excresences continue, touch them lightly with a solution of nitrate of silver.

A seaton made of black hellebone root, or a cord well soaked in turpentine, inserted in the dewlap, or flesh that hangs from throat, is always beneficial.

HOVE, OR HOVEN.

This is a frequent complaint among cattle in the Summer season, from eating too much green food, such as clover and other rank vegetation, causing excessive inflation from the gas generated

in the stomach by fermentation. It frequently occurs when cattle are removed from poor pastures into those of better quality, and sometimes, but in a milder form and without such changes of pasture. Swelling of the paunch is common among weakly cows, owing to generation of gas by fermentation from acidious matter in the stomach are like distentions often following calving.

Animals thus attacked must be speedily relieved or they will die, and as medicine is scarcely prompt enough in its action to cause discharge from the bowels, the only remedy seems to be the knife. The paunch being so distended there is scarcely any diffiulty in performing the operation. Pass your open hand from the hip bone forward to the ribs and the stomach may be felt; here insert a sharp pocket-knife from three to four inches, making the orifice of sufficient extent to admit the escaping gas to pass. We have known an incision made large enough to admit the hand of a man to remove the contents. Leave the cavity open for some time that all gas may escape. If the opening is large, a few stitches will draw the parts together, and they will soon heal.

In mild cases of this character, when the indications first appear, if the animal is made to run on a lively trot, the shaking of the stomach often produces the desired result.

Before resorting to the cutting process, if the animal does not appear to be too much distressed, give one and a half ounce of hartshorn in a quart of water. Potash, limestone, sulphuric ether and other neutralizers of gaseous matter have been given sometimes with almost magical effect, the distended stomach in a very brief period of time as-

suming its usual proportions.

CHOKING.

Cattle are very liable to choke from eating corn, apples or potatoes. The attendant appearances are great effort to cough up whatever it may be, and generally, a copious discharge ot saliva from the mouth. Suffocation will speedily ensue if relief is not promptly given. The location of the obstruction should at once be ascertained, and if at the mouth of the gullet, it can be readily removed bv the hand. If lower down, then try to force it onward into the stomach, which may be accomplished with a flexible rod, resembling the limber handle of a whip, first lubricating the throat with a pint of oil or melted lard. In the event of failure in these efforts, the only alternative is to make an incision through the skin, long itudinally into the throat ot sufficient dimensions to remove the substance; immediately afterwards carefully sewing up the wound. Operations of this kind should never be resorted to only in desperate cases. If skillfully performed, all will be well.

LOCKED JAW.

This disease is not of frequent occurrence in cattle, but more generally in oxen, and frequently from an injury to the foot, which may pass unnoticed for some time and result in Locked Jaw. The symptoms are stiffness of the joints, neck and ears, unsteady gait, walk unusually wide behind, and tremulous motion of the tail. In this condition the animal may linger for many days without being

able to eat a morsel, and will finally die from starvation.

Immediately on the complaint being discovered, he should be copiously bled to cause a relaxation of the muscles, when immediately administer the following:

One ounce and a half of Barbadoes aloes, ten grains of the Kernel of croton nut, powdered; dissolve in a small quantity of boiling water, and give when cool.

Should this cause a discharge from the bowels, give

One drachm of camphor, grated into one ounce of spirits of wine; one drachm of powdered opium. Mix with gruel, and repeat three times a day, in the mean time keeping the bowels free with salts or aloes.

If not entirely relieved, bleeding should be again resorted to, even to such an extent as to cause the animal to reel and stagger from weakness.

In this condition he must be kept very warm by heavy blanketing. If he inclines to eat give him bran or corn meal mashes. If the muscles still remain rigid drench with warm thin gruel. If it is yet found impossible to open the mouth, the medicine and gruel should be given by injection.

POISON.

When Vegetation commences in the Spring, cattle frequently get poisoned from eating poisonous weeds, hemlock. buckeye, crows-foot, dropwort, yew, etc.

The symptoms in each case vary. The animal generally moans, suddenly becomes stupid and ex-

hibits great pain, often delerious, and sometimes the stomach becomes swollen. The first object should be to get rid of the poisonous matter, either by drenching copiously with warm water to cause sickness of the stomach. Then give Barbadoes aloes, powdered croton nut etc., as directed in case of locked jaw. Moderate bleeding is sometimes resorted too with good results.

When the poison seems to be evacuated, give

One ounce of caraway powder, half ounce of gentian, powdered; half ounce of ground ginger and twenty drops of essence of peppermint in a little warm water.

WOUNDS.

All kinds of cattle are liable to wounds, and their treatment requires more care than great skill, except in a joint. In the first place remove all dirt and subdue any inflammation which may have taken place by fomentation with warm water. If the wound is a simple cut, draw the parts carefully together and sew it up; if lacerated and the flesh mangled and torn, these parts should be cut away with a sharp knife, and bring the skin together as closely as possible, and held in that position either by sewing, adhesive straps or bandage. If the latter place a little clean soft tow under the bandage. This dressing should not be removed for two or three days. If the wound looks healthy, dress with ointment, composed of the following:

Lard, two pounds; rosin, half a pound; melt together, and when partly cool, stir in half a pound of finely powdered calamine. Should proud flesh appear, wash with a strong solution of blue vitrol.

In case of protruded wound, use fomentations of march mallows, or poppy herds boiled in water for a few days to allow inflammation, and inject a tincture of aloes and myrrh into the wound twice a day. Should the wound be deep, and the pus cannot escape, a seaton should be inserted below to draw it off.

In cases of tumors on a horses shoulder from the action of collar bathe with a solution of common salt, or sal ammoniac. If not too far advanced, this may answer very well. If otherwise, make a lotion of the following and rub the parts gently with it:

Four ounces of bay salt, one pint of vinegar, one quart of water, one drachm of oil of organum.

If the tumor increases in size, a seaton should be inserted running from the top to the lower part.

In case of joint wounds in either cattle or horses, and especially when the joint itself is penetrated, or laid open from any cause. First wash the part carefully, removing all dirt, when it may be necessary to use the probe to ascertain if a bone is fractured. If doubt exists as to this, a poultice should be applied, not only to allay inflammation, but to ascertain if a fracture has taken place; if so, the discharge on the poultice will be a yellowish fluid, or joint water. This discharge must be immediately stopped, and the best way to accomplish this is to bind together a small comperers on the part, covering the wound and not remove it for many days. Should this not succeed, resort must be had to ironing, thus: Heat red hot an iron rod and draw it lightly across the wound, searing the entire surface It may be nessary to again repeat this operation, but in nine cases out of ten, the first will suffice. The sore may after a day or two be

treated as a common wound.

In all joint wounds, moderate bleeding and a dose of Cleansing Powders should be given to allay fever and inflammation.

ANGLE BERRIES.

This is a species of wart which grows on the eyelids of cattle and the teats of cows. If attended to early and touched with nitre of silver, they will soon disappear- If of full growth, tie a thread of waxed silk firmly round the base, and tighten every day. They will soon drop off.

FOUL FOOT.

This complaint is incident to cattle being pastured long on marshy land, or in oxen driven on hard stony roads, resembling quittor in the horse. It is very painful and causes lameness. It generally first appears between the toes, causing great inflammation and a discharge of offensive stinking matter. It is sometimes very obstinate, and should be treated in time, before it extends to the coronet, between the hair and hoof, descending down under the horn of the hoof. Immediately on discovering the complaint keep the animal on dry ground, clean out the hoof and pare off all the loose horn and proud flesh, if any. Then dress with butyor of antimony. With good care and attention to cleanliness it will soon be cured. If swelling or inflammation take place, poultice with flaxed meal. Bleeding and a dose of Cleansing Powders may be used with good effect.

MANGE.

This disease frequently attacks cattle after poor feeding in water. The complaint is contagious and the animal should be removed from others. The symptoms are recognized by the hide-bound appearance, scurvness of the skin and looseness of the hair. Make an ointment of the following, and rub daily with the hand all the effected parts:

One pound of flour of Sulphur, two ounces of mercurial ointment, half a pound of common turpentine, half a pound of lead. Melt the lead ointment and turpentine together, and while cooling stir in the sulphur.

A dose of Cleansing Powders will be a great service to the animal.

WARBLES.

These insects are very annoying to cattle. They are impregnated by the gad or ox-fly perforating the skin of the animal, over the loins or back, and there depositing an egg, which produces the warble or maggot. The location of the warble is easily discovered by passing the hand over the animal by the unevenes of the skin, the place where the warble is located, resembling a tumor about the size of a hazel nut. Each tumor has an opening at the top, covered over by a scab, which can be easily removed by rubbing.

SPAYING, OR ALTERING.

Too little attention is paid to Spaying, or Altering calves at the proper time. Bulls should never

be allowed to go beyond two weeks from the time of birth, although many farmers defer that operation until they are a year old. This is bad economy; if neglected until that age they become staggish, having a rough appearance, thick bone and will never bring within twenty-five per cent. of the price of a clean, nice, smooth animal gelted at the proper time. When altered young, but little skill is requisite in the operator, while if allowed to run for a year, the operation is frequently attended with loss of life if unskilfully performed.

It is a very common practice, and a bad one too, to cut the end of the sack, if the animals are old and strong, they are liable to bleed profusely. The best plan at all ages, is to slit it on each outside, from near the top down to the bottom; draw out the testicle and scrape the cord up close and cut it off. In spaying of heifers, practice and confidence in your ability to perform the operation are essentially requisite. The operation is similar to that of spaying sows, in which a good knife, rather rounding at the point, a spaying needle and a supply of good shoe thread is necessary. Take the heifer lay on a board or the ground right side down, with assistant to hold. Then feel for the end of the hip bone, shave the hair off with your knife, make an incission through the skin one inch below, and in a right line downward one inch; then cut the inside flesh lengthwise, making a hole sufficiently large to introduce your fore finger, reaching up toward the back bone, remove the "pride" and cut it off close to the "calf bed." Then follow the "calf bed" with your finger to the opposite end, where you will find the other "pride," which cut in like manner. Now replace the "calf bed," grease with hogs lard

and sew up rather slack, but strong, leaving room for all matter that may gather to escape. The proper age is from two weeks to two years old, the earlier period however is preferable for reasons heretofore mentioned in this connection.

TO ESTIMATE THE WEIGHT OF CATTLE.

The farmer often suffers loss by his lack of knowledge in estimating the weight of cattle, an art in which experienced drovers and butchers are so well versed as to give them an advantage over him in the sale of stock. We append the following method, by means of which the weight of cattle may be so nearly ascertained, as to vary, if any-

thing; but a mere trifle when put upon scales of the most accurate mark:

With a tape line, or common string that will not stretch, and rule, measure the girth of the animal just behind the shoulder-blade, and in the same manner obtain the length from the bone of the tail along the back to the fore part of the shoulder blade, multiply the given measure of each together; then multiply the result by 23, the number of pounds allowed to the superficial foot, you will have the weight.

For example, the girth is	6ft. 8 inches.
Length	5ft. 3 "
Result	32 feet.
Multiply by	23
	96
	64
Net weight	736 pounds.

When an animal measures less than 9 and even 7 feet in girth, the number of pounds to the superficial foot is 31.

Any farmer with common sense can understand this, and if he is cheated by greater experts in the art, it is his own fault.

Smaller animals, hogs &c., measuring say 2 feet in girth, and 2 feet from shoulder to tail, the result is

Multiply by

the number of pounds to the superficial foot of animals measuring less than 3 feet in girth.

Weight of animal. 4ft, 11 X 44 pounds.

The rule invariably works so accurately that it is

safe for any one, with an experienced eye, to either buy or sell by it.

CALVES.

A few hints on the care of calves from their birth, the diseases to which they are subject, and their treatment, we deem of importance in this connection, and recommend every farmer, whose desire should be to raise healthy cattle to pursue attentively each, under its proper title in the following pages:

BIRTH.

At or before the time of birth, according to the season, the cow should be provided with a proper place, clean, dry, well littered and comfortably warm if the weather is bad, but, if in the Summer season, a pasture apart from other cattle will answer as well. After the calf is dropped and it appears to ordinary strength, it should be left entirely to the care of its dam, until licked dry and clean. This, not only benefits the calf, but the mother in eating the cleansing, phich acts as a physic, soon discharges all foul matter, a longer detention, of which, would render her feverish, consequently her milk bad, and injure the calf. The most experienced cattle raisers take from the cow before the calf is allowed to suck, a small quantity of milk, lest it might purge the ca f; the calf then having liberty to suck all it may desire for at least three or four days, unless the cow has a greater abundance of milk than it should have, and in that event a part should be drawn off In case of an

over supply of milk, and the calf is strong and able to take it, he may gorge his stomach and become sick, and if weak and not able to take it all, the milk will remain in the udder, coagulate and cause hardness, fever, soreness and consequent damage to the cow.

After the third or fourth day it is advisable to keep the cow and calf apart, allowing it access to the cow three times a day, and at each time a portion of the milk, according to supply, it at that stage being fit for use, should be drawn, the calf allowed the first. The frequent sucking from the bumping of the calf's head, causes a more free discharge of milk, renders the bag soft, by the prevention of secretions of milk, causing kernels in the bag, which become sore and painful and make the cow difficult to milk.

The calf should not be exposed to wet or cold.

BLEEDING FROM THE NAVEL.

Calves sometimes bleed from the naval string, and if copious and not immediately stopped will speedily end in death. Should such take place, tie up close to the body with a strong thread. Should inflammation ensue, foment with hot water and rub gently with the hand around the part. If the inflammation cannot thus be subdued, it will become necessary to poultice to produce suppuration, which may at the proper time be discharged by the use of a sharp pen-knife.

DIARRHEA.

Young calves are very subject to this complaint

from various causes, in the majority of cases caused by exposure to wet and cold, feeding gruel, sour milk, starvation etc., and in most cases the animal runs down so rapidly that cure becomes difficult. In such cases the matter discharged is frequently accompanied by a bloody, and often fited mucus with but little of the natural substance. Prompt measures should be taken to stop the cause of this trouble, by cleansing the bowels and stomach of all acidity and asisting the too frequent purgations. To effect this, in the first place give from two to three ounces, according to strength and age of the animal, of caster oil, and shortly after give the following astringent:

Two drachms of prepared chalk, ten grains of powered opium, half a drachm of catechu, half a drachm of ground ginger and five drops of the essence of peppermint. Mix in half a pint of gruel.

The above may be repeated twice a day until the discharge becomes natural.

Should the discharges cause straining and apparent pain, an injection of a pint of blood warm gruel, mixed with a drachm of powdered opium, will have a good effect. In cases of this character inflammation of the bowels is frequent and this may be determined by the animals unweariness, getting up, lying down, dryness and heat of the mouth, etc. If the animal is very weak, recovery is almost hopeless, but, if strong enough, it would be advisable to bleed to the extent of one pint.

Starch is often administered with good results.

COSTIVENESS.

Calves, a few days after birth are subject to cos-

tiveness, caused by suffering it to suck too much etc. The most effectual remedy we know when young is to administer epsom salts in ounce doses, dissolved in warm water, every six hours until relieved.

Constipation of the bowels in cattle, either young or old, if not at once counteracted, is most dangerous, causing fever and other serious complaints. A little care and attention in this matter, may prevent most serious loss. They should be watched and as soon as the dung is observed to be hard and dry, a dose of purgative medicine should be given, in quantity as age and strength may justify. Epsom salts is most advisable, but common salt and water will answer.

HOOSE, OR COUGH.

The presence of this disease may be ascertained by violent coughing, and, as it is said to be contagious, the animal should be immediately removed from other stock, and placed under tolerably warm shelter. In a *post mortem* examination of a case of this kind, should the wind pipe and air tubes be filled with small worms, said to be engendered by drinking water in which the leaves are deposited; taken into the stomach, absorbed by the blood vessels and thus enter the windpipe. In a majority of cases, if taken in time, moderate bleeding, followed by a mild purgative and a fever powder will effect a cure. Should the case be an extreme one, exhibiting the worst symptoms, the following, for animals from six to twelve months old is an excellent remedy.

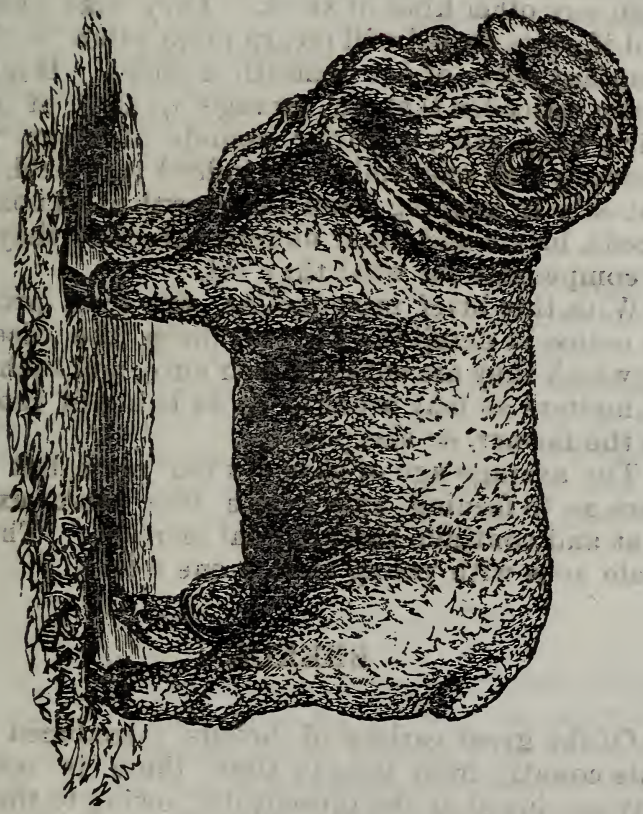
One ounce of oil of turpentine, three or four

ounces of linseed oil, one drachm of ground ginger. Mix and repeat once a week as may be necessary.

CANKER IN THE MOUTH.

During the cutting of teeth, canker in the mouth is not an unfrequent disease in calves. It is accompanied by soreness of the gums, with pimples, which extend to the membrane of the mouth, which often run together, causing considerable ulceration, swelling of the gums and tongue and fever, with consequent inability of the calf to eat. The most advisable treatment is first to cleanse the bowels, with doses of epsom salts of two ounces each, repeating daily until all inflammation is allayed. In the mean time, wash the mouth frequently with a solution of alum and water.

CHAPTER, XI.



SHEEP.

Sufficient attention is not given to the raising and care of sheep, considering their great value too

the farmer as an improver of his lands, independent of their pecuniary profit from fleece and animal increase. It is a fault well known to all farmers, that sheep subdue all coarse plants from their pasture, and will bring up a run-down farm sooner than any other kind of stock. They like variety, and if properly fed will return more value in flesh than any other of our domestic animals. It is generally conceded that an average quality of yews fairly kept, will yield four pounds of clean wool annually and one lamb; and indeed it is held, that not only in keeping down the growth of all noxious weeds, briars and other underbrush, that they fully compensate for what they eat.

With this brief introduction, we shall proceed to notice in detail the care of sheep, the diseases to which they are subject, their cure, and such other matters as may occur to us, as being of interest to the farmer, or sheep raiser.

The average age of sheep is ten years, but with care as to feeding and health they often extend that and continue their annual increase. The female goes with young twenty-one weeks.

BREEDS.

Of the great variety of breeds introduced into this country from time to time, there is scarcely any one breed at the present day, owing to the constant crossing of each, that can lay claim to original blood. Of the different varieties, we will name the Spanish and Saxon Merino; the Leicester or Bakewold; the South-Doun; the Cotswold, the Cheviot and Lincoln.

THE SPANISH MERINO.

Of these there are several varieties, differing in form, size, quality of wool. They are generally estimated as a hardy breed, and thrive well on our soil and climate. They were originally introduced from France and Spain. The former is large bodied, short-legged and yields a heavy fleece; the latter smaller, less hardy, yielding a finer grade of wool, and less in quantity.

The flesh of those two varieties, when allowed to attain a proper age; not less than three years, is of fine flavor and short-grained.

THE SAXON MERINO.

There are few of the full blood of this breed in the country, having been crossed and recrossed until they have nearly lost their identity. The mixed breeds thus produced, particularly those crossed with the Spanish Merino, yields a wool equal in texture to the former. In body and fleece they are lighter, are not quite as hardy, and require more care, with better feeding and shelter in winter.

THE NEW LEICESTER.

The principle recommendations of this celebrated breed, according to Mr. Culley, the great English sheep breeder, are its beauty and fullness of form, in the same apparent dimensions greater weight than any other sheep, an early maturity and a propensity to fatten equaled by no other breed; a diminution of the proportion of wool and the return of the most money for the food consum-

ed.

After the first shearing the fleece will average six pounds of wool of generally six inches in length, an excellent combing wool, for carpets, or other coarse fabrics, but seldom used in the manufacture of clothes. In English markets the mutton is much appreciated, and commands the highest price.

In this country, except on rich pastures they are not considered a profitable breed.

THE SOUTH DOWN.

This breed does not rate high as wool producers, which in point of length is of the medium class. It is hardy, and stands our climate well. In England it matures at the age of two years, when it will generally average from eighty to one hundred pounds of meat to the carcass. It is easily kept, and is considered very profitable.

THE COLTSWOLD.

This is one of the largest and heavy wooled sheep we have; the length sometimes reaching from six to eight inches, and the fleece weighing from seven to eight pounds. The mutton is of superior quality. The ewes are very prolific and good nurses, and the young mature at an early age.

THE CHEVIOT.

The Cheviot is, as yet, but little known in this country. It is is however well adapted to the climate, capable of enduring much cold and existing upon but little food. It is of small bone, well pro-

portioned, fattens easily, and produces a fine, but short grade of wool.

THE LINCOLN.

This breed derives its name from having been first bred in Lincolnshire, England, over sixty years ago. The mutton is coarse grained. They are remarkable for their long wool and heavy fleeces, three year old well kept weathers, said to produce fleeces weighing from eight to fourteen pounds each, the carcass from eighty to one hundred and twenty pounds net.

MANAGEMENT.

The management of sheep, more particularly in the winter season, should be left entirely to the judgment of their owner. In good open fair weather, they will thrive and keep in good health better in the open air. But, during snow and rain storms, they should be provided with open, dry and clean sheds to take shelter under, otherwise, with all the food that may be given, they will lose flesh, and before the opening of Spring many are likely to die.

FEEDING.

In open dry weather, as we said before, sheep will do better in the open air; they will pick up their hay or other feed clean from the frozen or dry ground, when, if the land is soft and muddy, they will scarcely touch it. They should be provided with movable racks for coarse food, so that when

the ground gets tramped up, it can be moved about from one place to another, and troughs, from which to eat their meal or grain. Sheaf oats, with short straw, is excellent food and highly relished by them. Either corn or oats, when other food is given, should be supplied sparingly. By judicious feeding with grain, the fleece is largely increased in weight Every sheep owner should harvest some oats before it becomes fully ripe for his sheep. It is more nutricious and sweet, and they like it better in that state. When the weather will admit, and grass is fresh and green, they will prefer to run on pasture, but nevertheless, they should have some grain each day to keep them in good condition. We have fed turnips with good advantage in Winter, but they should be kept where, and fed when they will not freeze.

SALT AND WATER.

Sheep at all seasons should be supplied with salt once a week while running on grass, but oftener in wintr when being fed on dry food; it aids in digestion. A little sulphur mixed with it answers a very good purpose.

In Summer, when grass is young and juicy, and dews are frequent, sheep will get along very well without water. At all other seasons they should have free access to pure clean water. They are very particular, and do not relish foul or stagnant water.

SHADE.

It is very important to provide sheep with sufficient shade during the hot months of Summer; otherwise they will lose flesh by running from one place to another to escape the scorching rays of the sun. Trees answer the purpose best, but in their absence temporary bound sheds will answer well.

LAMBING.

Every prudent stock raiser should manage to have his lambs come at a season when the weather is expected to be pleasant. This of course depends on the latitude. In the South it is not very material when, but in the North, from the middle to the latter part of April is the best time. At this season generally, the young grass is begining to spring up, and will increase the ewe's milk.—Early grass should be reserved for this purpose. If the weather is genial and pleasant, the open dry pasture is best for lambing. If it can be avoided ewes in large numbers should never be housed at this period; they are apt to get separated, the lambs run over, and if the weather is cold, perish before they are discovered.

WEANING.

It is a great mistake to allow a healthy, strong lamb to run with the ewe after it is four months old. It is better that it should be then weaned, otherwise the dam will become weakened and the lamb not benefited by further nursing. When

separated, the lambs should be removed to a distant, fresh pasture, where they cannot hear each others bleating, causing them to be restless. An old tame ewe or two turned into the field with them will tend to keep them quiet.

In order that the ewes may go dry as soon as possible, keep them on short allowance of food for a few days, and if the udder becomes swollen from the quantity of milk, it should be drawn off and the bag washed and rubbed to softness. When entirely dry, put them in good pasture to regain their usual condition.

CASTRATION AND DOCKING.

If the lamb is healthy, at the age of two weeks emasculation and docking should take place. The operation is simple and easily performed. It is best that two men should do the work to prevent the lamb from struggle. One man hold the animal firmly down, with his four legs drawn together and forward. The operator prepared with a sharp knife, may then slit open the bag on each outside from top to bottom, so as to admit of the testical being drawn gently out loosen the scrotum from the lower end scrape the cord well up to the small part with the knife and cut it off.

We have known many fine lambs greatly disfigured by want of judgment in docking. Some cut to short, while others do exactly the reverse; either will mar the appearance of the animal. From two to two and a half inches is the proper length. Before severing the joint, draw the skin back, so that when cut, it will form a covering for the end.

In cold weather no application is necessary, but,

if warm, smear the parts with tar; it will will answer the double purpose of accelerating the healing process and keeping off flies.

Thus much in the different herds of sheep and their treatment, we shall proceed to notice their

DISEASES AND CURES.

In the treatment of sheep for the various diseases to which they are subject, the same medicines, but in lesser quantities, are applicable to them as to cattle; their internal structure nearly alike; the deseases of both, bearing great resemblance to each other in their nature, cause, progress and treatment. The difference in the quantity of medicine to be administered to sheep is from one sixth to one eighth part of the usual dose for cattle. When bleeding has to be resorted to, the quantity of blood taken will depend on the size and strength of the animal, and nature of the disease. From a full grown sheep, a pint, and a lamb one quarter of that quantity will suffice. The blood should be drawn from the jugular vein.

There is not a more destructive disease among sheep, particularly young lambs than that of

DIARRHEA.

Lambs are frequently attacked with it when not over a day, but oftener a week, and from that to three months old, When very young, the chance of recovery is small, but with those of more advanced age and strength, care and proper treatment will bring them through. The causes of diarrhea are various, exposure to cold and wet weath

er, want of proper support, and not unfrequently the mothers milk seems to disagree with the lamb. In such cases a change of food is desirable. It also may be owing to fever in the ewe, causing her milk to be purgative and unwholesome, when the following should be given to the ewe, which will likewise benefit the lamb:

Two ounces of Epsom salts, a quarter ounce of ground caraway seed, dissolve the salts in a pint of thin water gruel and mix.

Should the foregoing not check the disease, the following, mixed with a little thin starch and water, should be given the lamb promptly night and morning:

One drachm of compound of chalk and opium, a scruple of gentian and three drops of essence of pepermint.

If the purging should continue, it is in most cases advisable to take the lamb from the ewe and feed on boiled cow's milk, let cool off and mix with one pint a scruple of powdered chalk.

This is sufficient for each meal, feeding regularly three times a day. It is always best when a lamb is thus attacked to dock the tail, if that operation has not previously been performed.

If the lamb is two or three months old, the medicine named should be increased in proportion.

COSTIVENESS.

This dieease frequently attacks sheep and should be speedily remedied. It is generally an indication of existing or approaching fever, the evidence of which is restlessness, heat of the mouth, foul breath and heaving of the flanks. Bleeding in pro-

portion to age and strength should be resorted to, and give two ounces of Epsom salts in a little gruel, repeating the dose every six hours until the desired effect is attained.

Should the animal refuse to eat, drenches of gruel will afford sufficient nourishment; but in the mean time the bowels must be kept free.

STAGGERS.

The most thrifty in the flock are sometimes attacked with this disease, the presence of which, may be decided by heaving of the flanks, standing still, with head protruded; or unsteady walk, and frequently attended with costiveness. Bleeding should be promptly resorted to, and give the following dose mixed with gruel twice a day until relieved:

One scruple of powdered digitalis, ten grains of emetic tartar and two drachms of nitre.

FOOT ROT.

This destructive disease in sheep is likened to the human small-pox, and independently of all exterior influences or of the individual constitution of the animal, attacking young as well as old, healthy as well as sick, its devastations are equally fatal.

The more common breeds of sheep are not so liable to its attacks, as their hoofs are of coarser texture, while the frame of the finer breeds, particularly the Spanish Merino, is not so well fitted to resist the disease. Its causes are attributed to wet pasture tending to soften the foot, or standing in

filthy yards or stables. The locality of the disease is in the capsule of the foot; in mild cases, only the parts above the capsule are effected. Numerous remedies, such as acids and caustics have been tried with but indifferent results. The proper treatment is to cut out with a small sharp knife all the lose born which is separated from the hoof and is suffused white matter; the object being to lay bare the diseased suppurating substances, and to destroy the infectious matter on them. For this purpose chloride of lime is the most rapid and efficacious of all remedies. It should be applied to the diseased parts, the cleft fillen with tow, and the foot bandaged to keep it clean and protect it from irritation. The diseased hoofs should be examined daily, the chloride of lime again applied and rebandage as long as may be necessary. Two or three such applications generally effect a cure. The pain and lameness soon disappear; the skin becomes thicker and more compact, every day forming the new horn. The foot-rot being a purely local disease, internal remedies are wholly useless.—

When the lameness has disappeared and a firm horn renewed, the sheep can be returned to the healthy flock, before which it is recommended, that he should be made to stand in a trough of water, in which is mixed a pound of chloride of lime to each pail of water. Any virus clinging to the hoof is thus destroyed. The sheep can be kept standing in the water by the erection of a temporary fence around the trough.

RED-WATER.

This disease is frequent among sheep in the most thriving condition. Sometimes it is sudden in its attack and speedily fatal. Its first symptoms are refusal to eat, slow to move, panting and restless. It is more common among lambs and generally appears in the Spring. The first remedy is bleeding. Then to full grown animals give the following dose reduced from one fourth to one half for lambs:

One ounce of Epsom salts, one scruple of ground ginger, one drachm of gentian, one ounce of linseed oil. Mix with a small quantity of warm water.

If the animal should progress favorably, a change of pasture would be advisable.

THE BLOOD.

The first symptoms of an attack by this disease are dullness, hanging head, bloodshot eyes, with considerable heaving of the flanks and staggering gait. If neglected, a few hours will terminate in death. It is more frequent in Spring and warm weather. Bleeding promptly and freely is the only hope. A simple purgative of two ounces of epsom salts administered every second hour until the bowels are thoroughly cleansed should be given. Afterwards repeat the physic night and morning for three or four days. Some sheep raisers when the disease appears in the flock, bleed every animal; give each a dose of physic and remove them to other pasture.

GIDDINESS IN THE HEAD.

This disease is more in flocks pasturing on low lands. It is most prevalent in the Spring, and continues through the Summer. Its symptoms are, loss of appetite, difficulty in bending the neck to eat, appears to be frightened at the least unusual sound, and runs round and round, holding his head on one side. It is not contagious, and having once attacked the animal and loss of flesh commenced, death is certain to ensue. It is owing to pressure on the brain by a bladder like substance formed between the skull and brain. Many efforts have been made by Veterinary Surgeons to rupture this substance, but few have proved successful.

As no certain cure is known, prevention should be resorted to. Shelter from storms of rain and snow, and feeding on uplands is advisable.

INFLAMMATION OF THE BRAIN.

This disease in many respects resembles the last case mentioned. The symptoms are delirium, eager and ferocious countenance, runs around, and will bunt at any object he may meet. If these symptoms are not promptly assisted, violent inflammation of the brain and its membranes ensues, and the case is hopeless.

Immediate and copious bleeding, followed by a dose of salts is the only remedy. If the animal does not get worse, repeat the dose occasionally, keeping the bowels free.

CATARRH.

This is a common disease, well known by the discharge from the nose of an offensive matter. It is the effect of cold and bad treatment. It frequently runs into inflammation of the lungs, consumption and death. Cough frequently accompanies this discharge; and if there is much fever, it will be shown by loss of appetite and rapidly growing weakness.

This disease sometimes attacks whole flocks and it is always safer to keep those infected apart.

Bleeding and the usual purgatives should be resorted to, with the change of feed, and shelter, if the season is cold and wet.

In extreme cases of this disease inflammation reaches the throat down the wind-pipe to the air passages of the lungs, producing bronchitis, which is very dangerous.

Experienced sheep-breeders recommend smearing the nose frequently with tar. This is doubtless good if adopted in time. Carbonic acid applied in like manner has an excellent effect.

It is a remarkable fact in this connection, that sheep pastured on pine lands, where cedar and other resinous plants grow, are very seldom attacked with this loathsome disease.

INFLAMMATION OF THE LUNGS.

Sheep are subject to this disease, caused also by cold and bad treatment. Its symptoms are the same as catarrh. If the animal is full grown, take one pint of blood from the neck and give two ounces of salts. The following dose should also be given once a day until the symptoms disappear:

One scruple of powdered digitalis, ten grains of emetic tartar and two drachms of nitre. Mix with gruel.

INFLUENZA.

This disease is somewhat similar to the two last named, with the exception, that the discharge from the nostrils is more profuse. It is attended with great prostration of strength, closed eyes and a disposition at times to run in a circle.

Bleeding must not be resorted to. If the animal has not been purged, administer half an ounce of salts with one drachm of gentian, dissolved in gruel. If purged before, omit this and give the following:

One ounce of prepared chalk, half drachm of catechu, twenty grains of opium. Dissolve in gruel; administer twice a day until the purging ceases.

THE HOOVE OR BLOWN.

Sheep are subject to similar attacks like cattle and from the same causes. When first put on fresh succulent pasture, such as clover, they should be driven slowly along and not allowed to gorge their stomachs. The same remedy should be applied—piercing through the paunch on the left side between the hip-bone and the last rib, to cause the escape of the gas fermented. A small limber stick with a smooth knob on the end and thrust gently down the gullet into the paunch is preferable to the knife, and is safer.

When first attacked, if the animal is put into a bare pasture and kept moving slowly, it may be re-

lieved, by the contents of the stomach being evacuated. It is desirable in all cases to physic, and we recommend the following to be administered every six hours until the bowels discharge freely.

One ounce of glauber salts dissolved in four ounces of peppermint water, one drachm each of tincture of ginger and gentian; mix in boiling water and give when cool.

JAUNDICE.

This complaint is frequently very destructive. It is owing to a superabundant discharge of bile, or an obstruction of the bilary tubes, causing an overflow of bile into the circulation, penetrating the capillary vessels. Cases of this kind are more prevalent in well fed animals, scarcely ever attacking poor half kept stock. The symptoms are yellowness of the skin and eyes, sometimes purging, but more frequently costive. On first discovery of this disease it will rapidly yield to proper treatment. In the first place move to a bare pasture, then give the following, repeating the same in half doses, each morning for three or four days.

Two ounces of Epsom salts, quarter of an ounce of ground caraway seeds; dissolve the salts in a little warm water and mix with thin gruel.

ROT.

This is most prevalent among sheep, pastured on marshy land. On uplands or sandy soils it is unknown. The earliest symptoms of this disease, is one from which no certain conclusion can be drawn, except that the animal is ill, labors under

fever, and does not feed well. Shortly a palish yellow pervades the skin, most evident in the white of the eyes. As the disease progresses, the bowels become relaxed, discharging a fetid matter of unnatural color, which will not yield to all astringents; the wool becomes loose, a swelling sometimes gathers under the chin, which, if punctured, exudes a watery fluid, the belly distends, and in this condition the animal may live several months, but death without relief is certain. A succession of dry weather has frequently been known to retard the progress of the rot, or even a change to dry pasture. The disease appears to be an affection of the liver, and for which many remedies have been recommended, and but few, if any, have stood the test of extensive experience. An extensive and intelligent sheep farmer, after all other remedies failed, tried the virtues of common salt, with good results. First of all the bowels should be thoroughly cleansed with Epsom salts; then compound the following, put the whole in a quart bottle and fill up; shake well and give a tablespoon full night and morning:

Eight ounces of common salt, two ounces of powdered gentian, one ounce of ginger, four ounces of tincture of calomel. Mix and bottle as directed.

Another authority recommends adding to the above three ounces of spirits of turpentine, and shake well each time before giving.

Administer two table-spoonsful night and morning; the latter before eating if possible.

SCAB OR MANGE.

The symptoms of this disease are first discovered by the eagerness of the animal to rub and scratch

against every post or tree, and biting at his fleece. The wool becomes loose, raises up, and the surface of the skin along the back is covered with a hard dry scurf. The disease is contagious and the animal infected should be removed from others.

Various remedies are recommended for this disease, but the cheapest, safest, and as effective as any, is the following:

To a strong solution of tobacco water, say one quart, add two ounces each of corrosive sublimate and copperas, making the quantity more or less in proportion to the number to be treated.

Take the sheep with head between your legs, and lay the wool open along the back from tail to shoulder. It the scab forms a hard thick crust, scarify with a penknife, or rub so as to raise it, and pour on the liquid from the bottle with a large quill inserted in the cork. Enough of the mixture should be applied to saturate the scab; then rub in. One dressing generally effects a cure. If sheep are noticed to scratch after this, repeat the application.

LICE AND TICKS.

These vermine in sheep are too well known to stock raisers to require any lengthy description.—The louse is of a brownish color, flat body, with three legs on either side; the tick hasa round body, and small head, which he buries into the skin, which he holds with such tenacity as to be with difficulty removed. They are both injurious to the wool and anoying to the animal, keeping it in a constant state of torment from incessant itching and scratching. After shearing is the best time

to get rid of these pests. Some immerse the entire body in a wash, composed of thirty gallons of soft water, four pounds of soft soap and two pounds of arsenic. When the animal is taken out, the wool should be pressed, so as to take the wash as thoroughly as possible out of the fleece. Sheep thus treated should be kept from cold and wet for a few days.

We do not approve of this remedy, because of its troublesome application, and prefer the following as more effectual and more easily applied:

One pound of flour of sulphur, four ounces of Venice turpentine, two pounds of rancid lard and four ounces of strong mercurial ointment. Rub well together. It may be made more fluid by adding an equal weight of neat's-foot oil. A strong decoction of Tobacco juice may be used with good effect for both tick and lice.

DIARRHEA.

Sheep can scarcely be turned into fresh pasture in Spring or Summer without being subject to this complaint; but this in most cases is beneficial than otherwise. If not too severe it rouses the digestive organs and causes them to thrive more rapidly afterwards. Purging from young grass is generally of short duration, but if it should continue, they should be taken off and put on dry feed, and the following astringent given:

A quarter ounce prepared chalk, half a drachm of ground ginger, half a drachm of powdered catechu, two grains of powdered opium. Mix in a little gruel and give once daily until the purging ceases. Suet boiled in sweet milk is given in severe

cases with good effect. As the diarrhœa is liable to return, the sheep had better be kept on old grass, or if that cannot be had, give daily a little corn and hay. When the diarrhea is accompanied by chronic cough, the complaint may be temporarily relieved, but never cured.

INDIGESTION AND DEBILITY.

The digestive organs of sheep are very apt to lose their powers, when kept on scant feed, as well as exhaustion from other causes. They appear not to relish food and fast loose flesh. If not neglected too long, the proper remedy is to arouse the organs to tone and action, by administering the following: One ounce of Epsom salts, quarter ounce of ground caraway seeds; dissolve the salts in hot water and mix with thin warm gruel. Repeat as often as may be necessary.

BLINDNESS.

Inflammation of the eye, the forerunner of blindness may arise from various causes. At first a watery fluid and subsequently a mucus matter is discharged and finally a white film covers the entire eye, accompanied with fever. When first attacked bleed from the corner of eye, by puncturing about an inch or less from the eye and let run freely.

Then give, two ounces of epsom salts, quarter oz. of ground caraway seed; dissolve the salts in warm water; mix with thin gruel. Repeat if necessary in three or four days. A tea-spoonful of laudanum mixed in half a pint of soft water, will be found an excellent wash for the eyes in such cases.

HOGS.

A few hints on the feeding and growth of hogs may not be considered out of place as an introduction to this subject, their disease, treatment and cure. First as to feeding, we believe, may be known from experience, that with a little more care in their management and feeding, that they would be a greater source of profit to the farmer, by maturing in their growth much earlier than they do and at less cost. In the first place, they should be kept warm and dry in winter, and instead of throwing out an ear or two of corn in mud and filth, prepare their food and you will be rewarded for your trouble. Now we shall present to the reader the difference between feeding raw corn and that prepared. The most experienced hog raisers estimate, and in which we fully concur, that a bushel of raw corn, fed to a healthy hog, and under favorable circum-

stances as to shelter &c., will yield about nine pounds of pork, while corn ground into meal increases in value about 32 per cent. over that of corn fed in the ear, and by thoroughly steaming and cooking the whole corn raises its value to but little less than that of cooked meal, which is not less than 66 per cent. over raw corn fed in the ear. It is not the grinding, steaming or cooking the corn will add to the element already existing, but rendering the whole more nutricious and easier digested so that the maximum of nutrition is more certainly obtained. The proportions of difference in each mode of feeding, taking as a basis of our calculation that a bushel of raw corn fed in the ear will produce nine pounds of pork, that the same quantity of corn coverted into meal and fed in the raw state will produce twelve pounds of pork, thirteen and a half pounds from boiled corn, and sixteen and half pounds from cooked meal. This is not more than a moderate average to be realized from a bushel of corn under ordinary circumstances of weather with dry and clean feeding pens.

With these few remarks as to feeding, we shall proceed briefly to the consideration of the dfferent diseases to which the hog is incident.

KIDNEY WORM.

The symptoms of kidney worm are too well known to require any explanation. It is quite fatal if not attended to in time. In the first stages of the disease small portions of arsenic occasionally, mixed with meal and fed will effect a cure. Corn well boiled in strong lye has been given with good results. Hogs should be as regularly salted as cat-

tle, and if a little wood ashes, and sulphur were mixed with their salt, they would neither be troubled with kidney worm or any other disease.

COSTIVENESS.

Hogs confined closely to pens and fed on dry corn are very subject to costiveness. Three ounces of epsom salts dissolved and fed in a little slop and water and repeat day after day if necessary, will give relief. When convenient a meal mash well salted may be given.

MANGE.

This complaint, the result of half feeding and dirty sheds is very prevalent among hogs. No animal can thrive with it. The wash for mangy sheep given on another page will be found an excellent remedy. If not very bad nor of long standing, wash thoroughly with strong soft soap and warm water, rubbing in well.

LICE.—Hogs are very subject to lice and frequently at the same time as mange. The same treatment is recommended.

SORE EARS.

Some hogs are very subject to sore ears, particularly the large lop-ear breed. They suffer much, particularly in warm weather from flies and cannot thrive while thus affected, and the sooner they are cured the better. Apply the following as an ointment:

Two pounds of lard, half a pound of rosin. Mix

and melt, and when cooling stir in half a pound of finely powdered calamine.

QUINSY.

Hogs are frequently attacked with quinsy; an enlargement of the glands of the throat, inflammation and enlargement of the cellular substances between the skin and muscles under the lower jaw. Animals often suffocate from it. Purging and bleed- are essential and should be immediately attended to. Two ounces of salts administered every half hour until the bowels operate freely, and a little warm slop, milk &c., mixed with meal would be beneficial.

MEASLES.

This disease, although often unnoticed until after death, to the great loss by the feeder, may be easily discovered by the red and pimpled appearance of the skin. Hogs are not known to die from it. It is the result of large feeding of hot stimulating food, such as distillers and brewers feed, frequently from the animal being suddenly taken from poor food and given quantities of dry corn. As good a remedy as any is to feed with cold slops of meal and water, sparingly for a while and in the mean time dissolve and mix in occasionally a little sulphur and salts.

CHOLERA.

This is comparatively a new disease, but quite prevalent and disastrous in this country and Europe for some years past, though many affections, caus-

es, symptoms, and results are probably classed under this general term. The estimate of annual losses in swine in the United states, all attributed to this disease, is not less than from ten to fifteen millions of dollars, an amount greater probably, than the damage by all other diseases to any other kind of animals and yet it seems to be but little understood by Veterinary Surgeons. We claim however, having made some progress in this direction. In our "Formula of treatment of diseases of the horse" etc. published in 1867, we recommended the use of a painting material, known as "Venetian red," mixed with either sour or sweet milk in quantity as may be requisite. Thoroughly stirring well together, and place troughs, where the hogs may drink freely for two or three days. The proportions are one pound to five gallons of milk.

In all cases where tried it has proved successful.

BREEDING.

Before noticing the various breeds of hogs and their crosses now extant in this country, in which there is a great diversity of characters, in a greater or less degree of importance to the stock raiser, we shall proceed to give in brief some of the essential points. Like other animals, they should be selected with special reference to the nature of the climate, kind and condition of the farm. The main points to be observed in judging of the breeds of the hog, are the form or shape of the ear, head, length and shape of body, girth, and length of legs, and the fineness of hair. The large lop ear and coarse haired animal, generally indicates big bone, thick skin, and heavy eaters; while in the straight

erect ear, the size is smaller, quicker arriving at maturity with a less amount of food. The best formed, are those which are not over lengthy, full in the head and cheek, short neck, small in bone, thick, round and compact in body, full in the quarters, thin in skin; and of good size according to the breed; disposed to fatten at an early age are essential points.

We will now name the different breeds known, with some of their characteristics and leave the breeder to make his own choice.

THE BERKSHIRE.

This breed was imported from England into this country, in the year 1822, and is still a great favorite among stock men. It is generally in color, a yellowish white with black spots, short head, medium sized erect ears, thick close body, short legs, small bone, with hair having a rough appearance and inclined to be curly. It fattens quickly, its meat of fine quality, and weighs well.

THE SUFFOLK.

This is also a favorite breed; a cross between the Chinese and original Suffolk. It is smaller than the Berkshire, with more proportioned body, and full round quartes. In color it is white or flesh color. They attain when fat at the age of one year from 250 to 300 pounds. A cross between this hog and the Berkshire results in larger stock.

THE CHINESE.

This, although the first improved breed imported into this country, now over forty years ago, has been bred onl y to a limited extent, owing to its size, seldom attaining over 250 pounds in weight. It is small in limb, round in body, short head, broad cheek, with very thin skin and fine hair. Being very tender, it is better adapted to the Southern than the Northern States. The Chinese crossed by other breeds make an excellent hog. They are easily fed, mature early and their flesh is of fine and del icate flavor.

THE ESSEX.

This breed is generally black and white-mixed, mostly black. They are smaller in the head than the Berkshire, long, thin upright ears, short hair, fine skin, good hind parts, and deep round body. They have the reputation of being bad nurses, although good breeders.

THE CHESTER.

The origin of this favorite breed of hogs, was the importation of a male and female from China, about forty years ago, into Chester county, Penn., where by judicious crossing, they obtained a high reputation. They are generally known among hog fanciers in most parts of the country. They have a long body, square built, with small bone, and well formed, and will produce a greater amount of meat for the food consumed than any other hog known. They fatten younger than any hog we know of, and at the age of sixteen months

with good care, will average from 500 to 600 lbs., and at two years will run up to 700 or 800 pounds.

CROSSING.

It is by judicious crossing of breeds that some of our best varieties of hogs have been obtained. A cross between a superior and an inferior breed results in the offspring to the latter, and, in many respects often better than the former. In breeding from stock with qualifications of different descriptions and in different degrees, the breeder will decide what are indispensible or what desirable qualities, and will cross with animals with a view to establish them. He will, if necessary, submit to the introduction of a trifling defect in order that he may profit by a great excellence, and between excellencies, perhaps somewhat incompatible, he will decide which is the greatest, and give it the preference. These remarks will apply to all kinds of stock as well as hogs. A bushel of corn will make twice as much pork when fed to a Berkshire, a Suffolk or a Chester, as to a slab-sided, long-legged, long-nosed, self- sharpener breed, well known in the Western country some years ago.

FEEDING.

Hogs should have their meals at regular periods, never at any one time giving large supplies, that they may gorge themselves. At all times they should have only as much as they will eat up clean, thus keeping their appetites sharp for each feed as the time comes around. Hogs fatten most rapidly in such a state of the atmosphere as is most con-

genial to their comfort—neither too hot or too cold; September, October and November are the best months for making pork. The more agreeable the weather the less amount of food is required to supply the waste of life. In the first month named, old corn may be scarce, but the new crop then nearly fit or just cut should be given. Farmers who have practiced this mode of feeding say it is more nutricious, and the hogs thrive better on it than on old corn. After feeding the first month, they should have all that they can eat, but none to waste; regularity in feeding, a little salt occasionally, a comfortable place to lie and plenty of clean water, is the great secret of success. Where fed in open pens, in mud and mire, one-third, if not one half the corn fed on the ground is lost and the hogs are slow in fatting

SPAYING OR ALTERING.

Male hogs may be altered at any time from three weeks after birth to two months. At the former period there is no danger of accidents; they grow up and make nice smooth hogs; while, if left to get old, they will have a staggish appearance and never make good pork.

In performing the operation of altering a male hog; with a sharp knife, slit the scrotum sufficiently large, according to the size of the animal, take out the testicle, and draw on it gently, scrape the cord up close to the top and there cut it off. But in old hogs care must be taken in this respect to prevent rupture. With a large needle and strong thread—double if necessary, sew up, bringing the parts together, being sure to take good hold with

the needle and thread on the scrotum, but not drawing too tight, that any matter created may escape. Grease with lard; if the weather is warm, smear with a little thin tar.

Sows should be spayed also at an early age, but not let run on to a more advanced period; even after pigging, they should be then spayed, and may be without any risk, but more care is necessary. To perform this operation it is better that they be thin in flesh—a little gaunt. Unlike the altering of male pigs, spaying sows requires some anatomical as well as surgical knowledge, besides practice and confidence in your ability. Prepare yourself with a good knife, rather rounding at the point, a spaying needle and a supply of good sound shoe thread, the latter double. Lay the animal on a wide steady board, right side down, having an assistant to keep her in that positon. Feel for the hip bone and from one inch below shave off the hair and make an incision in of direct line downward, one inch in length, through the outside skin, then cut the inner skin straight with the grain making the orifice sufficiently large to introduce the fore finger of your left hand, reaching up toward the back bone, remove the pride and cut off closely to the pig-bed. Then follow the pig-bed to opposite side, where the other pride is located, and cut it off in like manner. This performed, replace the pig-bed, grease with clean lard and sew up the wound, strong, but not too close, in order to leave room for the escape of any matter that may accumulate. Old sows without spaying, should never be fatted; they require more food; their meat is inferior and seldom sell for over half the price of clean hogs.

THE VETERINARY PHARMACOPOEIA.

RESCIPES.

THE VETERINARY PHARMACOPŒIA.–The following formula of recipes to be used in Veterinary practice have been compiled from the writings of the most eminent Veterinarians of the present day; as Youatt, Clark, White, Blaine, Lawrence, Peel and others; together with all the more valuable recipes which we have found by long experience to be the most effectual in the several cases assigned them in the Pathology given, And from our own experience can confidently recommend the selection to the notice of Agriculturists and the owners of stock in general. It would be prudent for all who make horses, and the raising of stock a speciality, to keep on hand the more important ingredients necessary for the compound of the recipes herein given. A few venders of horse drugs, keep on hand a supply of Veterinary medicines; and where the mixtures can be depended on, and the ingredients are genuine and good, such an arrangement is a very effcient auxillary to every stable. The recipes necessary in the treatment of the diseases of the COW, SHEEP and SWINE are included in the arrangement. Where any speciality occurs, or where distinct recipes are requisite, they have been carefully noticed in the Pathology and description of the disease and the proper recipes therefor given. It will therefore only be necessary to be kept in mind in the preparation of the following recipes, that with the exception of acid substances, as mineral acids, &c, which no cattle can bear with equal proportions with the horse, the remedies given require about the following proportions: A large ox will bear the proportions of a moderate sized horse; a moderate sized cow something less; a calf about a third of the quantity; a sheep about a quarter, or at most a third of the proportion directed to the cow. Swine requires about the same proportion as sheep.

ASTRINGENT MIXTURES FOR DIARRHEA, LAX, OR SCOURING. 1. Powdered ipecacuanha, one drachm; do. opium half a drachm, prepared chalk, 2 ounces; boiled starch, 1 pint.

2. Suet, 4 ounces, boiled in milk; 8 ounces boiled starch; 6 ounces powered alum 1 drachm.

The following has been very strongly recommended in some cases, for the lax of horses and cattle.

3. Glauber's salts, 2 ounces; Epsom do. 1 ounce; Green vitriol 4 grains; Gruel, half a pint. When the lax or scouring at all approaches to dysentery or molten grease, the following drink should be first given.

4. Castor oil, 4 ounces; Glauber's salts, dissolved, two ounces; powdered rhubarb, half a drachm; powdered opium, 4 grains; gruel, 1 pint.

ASTRINGENT BALLS FOR DIABETES OR EXCESSIVE URINATION. Catechu, (Japan earth) half an ounce; alum powdered, half a drachm; sugar of lead, 10 gr. conserve of roses to make a ball.

ALTERATIVES—1 Levigated antimony, 2 drachms; cream of tartar, nitre, of each half an ounce.

2. Ethiop's mineral, levigated antimony, powdered resin, each three drachms. Give in a mash, or in oats or bran, a little wetted every night, or make into a ball with honey.

TONIC ALTERATIVES—1. Gentian, aloes, ginger, blue vitriol, of each one drachm; Oak bark in powder, 6 drachms.

2. Winter's bark in powder, three drachms; green vitriol do, one and a half drachms; gentian, do, three drachms; make, either of these into a ball with honey and give every morning.

3. White vitriol. 1 drachm; ginger or pimento, ground, 2 drachms; powdered quassia, half an ounce; ale 8 ounces. Mix and give as a drink.

4. Arsenic, 10 grains, oatmeal, 1 ounce. Mix and give in a mash or moistened oats nightly.

ASTRINGENT PASTE FOR THRUSH, FOOT ROT, FOUL IN THE FOOT &C.—1. Prepared calomine, verdigris, of each half an ounce, white vitriol, alum, of each half a drachm; tar, 3 ounces; mix.

ASTRINGENT WASHES FOR CRACKS IN THE HEELS, WOUNDS &C. 1. Sugar of lead, 2 drachms; white vitroil, 1 drachm; strong infusion of oak, or elm bark, 1 pint; mix.

2 Green vitriol, 1 drachm: infusion of galls, half a pint mix and wash the parts three times a day.

POWDER FOR CRACKS, &C. 1 Prepared calamine, 1 ounce; Fuller's earth, powdered pipe clay, of each 2 oun
and put within gauze, and saturate the moist surfac

sores frequently.

ASTRINGENT PASTE FOR GREASE. 1 Prepared calamine, Tutty powdered charcoal, of each 2 ounces; yeast enough to make a paste. To the above, if more strength be required, add of alum and verdigris each a drachm; corrosive sublimate, 2 drachms; spirits of wine or brandy, 1 ounce; soft water, 10 ounces.

Rub the sublimate in a mortar with the spirit till dissolved, then add the water. This is a strong preparation, and has proved successful in very bad cases of grease which have resisted all the usual remedies.

CLYSTERS 1 A laxative one. Thin gruel or broth, 5 quarts; Epsom or common salts 6 ounces.

CLYSTER FOR GRIPES 2 Mash two moderate size onions, pour over them oil of turpentine 2 ounces; capsicum or pepper half an ounce; thin gruel, 4 quarts.

NUTRITIOUS CLYSTER—3 Thick gruel three quarts; strong sound ale, one quart.

4—Or strong broth, 2 quarts; thickened milk, 2 quarts.

ASTRINGENT CLYSTER—5 Tripe liquor or suet boiled in milk, three pints; thick starch 2 pints; laudanum, half an ounce.

6 —Or alum whey, one quart; boiled starch, two quarts.

BLISTERS—1 A general one. Cantharides powdered, 2 ounces; Venice turpentine, resin palm oil or lard, ½ pounds; melt the three latter articles together, and when not too hot stir in the Spanish flies.

2 A strong cheap blister, but not proper to be used in fevers or inflammations, as of the lungs, bowels, &c. Euphorbium powdered, 1 ounce; oil of vitroil, 2 scruples, Spanish flies, 6 ounces, palm oil or lard, resin of each 1 pound; oil of turpentine 3 ounces.

Melt the resin with the lard or palm oil, having previously mixed the oil of vitriol with an ounce of water gradually, as gradually add this mixture to the melted mass, which again set on a slow fire for ten minutes more; afterwards remove the whole, and when beginning to cool, add the powders previously mixed together.

STRONG LIQUID BLISTER—3 Spanish flies in glass powder, 1 ounce; oil of origanum, 2 drachms; oil of turpentine, 4 ounces; olive oil, 2 ounces.

Steep the flies in the turpentine three weeks, strain off and

add the oil.

Cordial Balls,—Gention, powdered, 4 ounces; ginger do. 2 ounces; coriander seeds, do. 4 ounces; caraway do. 4 ounces; oil of aniseed, quarter of an ounce. Make into a mass with honey, treacle or lard, and give an ounce and a half for a dose

Diuretic Balls.—Resin, yellow, 1 pound; nitre, half a pound; white turpentine, half a pound; yellow-soap, quarter pound. Melt the resin, soap and turpentine over a slow fire, when cooling add the nitre. For a strong dose, an ounce and half, for a mild one an ounce. It should be kept in mind, that mild diureties are always equal to what is required; and heavy strong diuretics are always hurtful.

Diuretic Powders.—Yellow resin, powdered, 4 ozs; nitre ditto, 8 ounces; cream of tarter, do. 4 ouuces. Dose—8 or 10 drachms, nightly, which some horses will readily eat in a mash.

Uurine Drink.—Glauber's salts, two ounces; nitre, 6 drachms, dissolve in a pint of warm water.

Chronic cough balls.—1 Calomel 1 scruple; gum ammonica, horse radish, of each 2 drachms; balsam of Tolu, squills, each one drachm. Beat all together, and make into a ball with honey, and give every morning fasting.

Drink for the same.—2 Tar water, lime water, of each half a pint; tincture of squills, half an ounce.

Powder for the same.—3 Tartar emetic, 2 drachms; powdered foxglove, half a drachm; powdered squills, half a drachm; calomel, one scruple; nitre, 3 drachms; give every night in a malt mash.

Embrocation—Cooling for inflammations.—1 Goulards extract, half an ounce; spirit of wine or brandy 1 ounce; soft water 1 quart.

For the eyes.—1 Sugar of lead, 1 drachm; white vitriol, 2 scruples; water 1 pint.

2 Brandy, 1 ounce; infusion of green tea, 4 ounces; tincture of opium, 2 drachms; infusion of red roses, 4 ounces; excellent for man or horse.

3 Rose water, 6 ounces; mindererns spirit, 3 ounces.

4 Sulphate of zinc, 4 grains; alcohol, 1 ounce; lime water, 1 pint.

5 Alum, powdered, 1 drachm, calomel half a drachm. Mix and insert a little at one corner of the eye. The custom of blowiug it in alarms the horse.

SORE AND SCUMMED EYES. 6. Take fresh butter or rabits fat, honey and white of three eggs; well stirred up with salt, 1 spoonful in one powder; mix it well and apply to the eye with a feather. Also rub above the eye, (in the hollow,) with the salve. Wash freely with cold spring water.

WEAK EYES. 7. There is no such disease as hooks—it is only caused by inflammation, which causes the washer of the eye to become swollen, and protrude out, and some say that this is hooks—they never should be cut. By roweling at the side of the eye it will draw the inflammation from the eye to the surface, and cure the disease. Sometimes the eye becomes weak from wolf teeth; these should be extracted with a forcep.

FOR A BUISED EYE. 8. Take rabbits fat and use as above directed.—Bathe freely with fresh spring water. We have cured many bloodshot eyes with this simple remedy.

FEVER POWDER—1 Tartar emetic, 2 drachms; nitre, 5 drachms.

2 Antimonial powder, 2 drachms; cream of tartar, nitre, of each four drachms.

FEVER DRINK 3 Sweet spirits of nitre, 1 ounce; mindererns spirit 6 ounces; water 4 ounces.

4 Sweet spirits of nitre, 1 ounce; simple oxymel, 6 ounces; tartar emetic, 3 drachms.

MALIGNANT EPIDEMIC FEVER.—5 Simple oxymel, Mindererens spirit, beer yeast, of each 4 ounces, sweet spirits of nitre, 1 ounce.

FUMIGATIONS FOR PURIFYING INFECTED STABLES, SHEDS &c.—1 Manganese, 2 ounces; common salt, do oil of vitriol, 3 ounces; water 1 ounce.

Put the mixed Manganese, and salt into a basin; then having before mixed the vitriol and water very gradually, pour then by means of tongs, or anything that will enable you to stand at a sufficient distance, on the articles in the basin gradually. As soon as the fumes rise, retire and shut up thedoor close.

SCALDING MIXTURE FOR POLL EVIL—1 Corrosive sublimate finely powdered, 1 drachm; yellow basillicon 4 ounces.

FOOT STOPPINGS—1 Horse and cow dung, each about 2 lbs. tar half a pound.

HOOF LIQUID—1 Oil of turpentine, 4 ounces; tar, 6 ounces; whale oil, 8 ounces.

This softens and toughens the hoofs extremely, when brushed over them night and morning.

Purging medicines.—Balls— very mild. Aloes powdered, 6 drachms; oil of turpentine, 1 drachm. Mild, aloes powdered, 8 drachms, oil of turpentine 1 drachm. Strong, Aloes powdered, 10 drachms; oil of turpentine, 1 drachm. The aloes may bebeaten with treacle to a mass, adding during the beating the oil of turpentine. All spice, cream of tartar, jalap &c. are useless and often hurtful additions.

Liquid purge—Epsom salts, dissolved, 8 ounces; castor oil, 4 ounces; watery tincture of aloes, 8 ounces; mix ——the watery tincture of aloes is made by beating powdered aloes with the yelk of an egg, adding water by degrees. By these means half an ounce of aloes may be suspended in 8 ounces, of water, and such a purge is useful when a ball cannot be got down, as in partial locked jaw

Wash For Mange.—Corrosive sublimate, 2 drachm spirit of wine or brandy, 1 oz.; decoction of tobacco, do. white helebore, of each 1 pint; dissolve the mercury in the spirits, and then add the decoctions.

Wash For Coring Out, and Destroying Fungus, Or Proud Flesh, &c.—Lunar caustic one drachm; water 2 oz.

For Mange.—Sulphur vivum, 8 oz; arsenic in powder, 2 drachms; mercurial ointment, 2 oz.; turpentine, 2 oz., lard, 8 oz. Mix, and dress with every morning.

Ointments For Healing.—Turners cerdte, two ounces; white vitriol powdered, half a drachm; lard, 4 ozs.

For Digesting.—Turners cerate, 2 ozs.; white vitriol, 1 drachm, yellow basilicon, 5 ozs.

For Scab or Shab in Sheep, Mallenders and Sellen; ders in Horses, Foul Blotches and Eruptions in Cattle, in General.—Camphor, 1 dr.; sugar of lead, ½ dr. mercurial ointment 1. oz.

Cleansing Powders.—This is good for all cases where the blood is out of order. It will be found good for any derangement of the liver or kidneys; also for mange, surfeit, farcy, yellow water, grease-heel, indigestion, worms and loss of appetite. It is to be used as a general cleansing or regulating medicine. Take four ounces of golden-seal; 4 oz. powdered gentian; 4 ounces pulverized blood root; 4 ounces powdered sulphur; 2 ounces pulverized resin; 1 ounce of nitre; ½ oz. crude antimony; ½ ounce calomel; 2. lb of ground flax seed,

all pulverized, and well mixed; give one large spoonful in any kind of mash or chopped feed. Give to cattle in salt, bran slop; to sheep in salt and clay; to hogs in charcoal, ashes, or slop. This is the great preventative from all diseases; it keeps stock looking sleek and smooth and makes the farm pay.

Condition Powder.—For colds, coughs, and to strengthen the horses wind when he is kept on dry food. Take the bark from sassafras roots and sarsaparilla roots 3 oz. of each; dry and pulverize; add 1 lb. of brown sugar, 1 oz.. potash 1 oz. white turpentine, pulverized; 4 lb. yellow clay; 4 lb oil cake. Dose, one spoonful in wet feed.

To Cure Heaves.—Take one quart of blacksmith's forge water; add 1 oz. oil of vitriol; 1 oz. oil of amber; 1 oz. oil tar; shake freely and give from 20 to 30 drops daily in soft feed.

To Prevent Contageous Diseases.—One oz, asafœtida; 4 oz ginger; 4 oz. sulphur; 2 oz. resin; 1 oz. saltpetre; 1 oz. antimony; 5 oz. hickory or corn cob ashes. Dose, one spoonful twice per week.

For Rheumatism.—Take alcohol 1-2 pint; oil of organum; 1-2 oz.; cayenne, 1-2 oz.; gum myrrh, 1-2 oz.; 1 teaspoonful lobelia: mix and let stand over night, then bathe the part affected. This is the best medicine we ever used for rheumatism.

German Rheumatic Liniment. The following is sure cure for the Rheumatism. Neuralgia or stitch in the back, contracted by cold. 1 pt. of Alcohol; ½ of a large Beef's Gall; 1 oz. Spirits Amonia; 1 oz. Spirits Camphor; 1 oz. Oil Hemlock; 1 oz. Sassafras; 1 oz. Capsicum. Combine and let stand for 24 hours in a warm place, when it is ready for use. Bathe the affected parts at intervals of 4 or 5 hours, and dry in well by the fire.

The Indians Most Specific Cure For Inflammatory Rheumatism.—1. qt. alcoho l; 1 teacup jimson seed, ground; 2 ounces sassafras oil; 2 oz. foxglove; 1 table spoonful cayenne pepper. After bathing thoroughly with the above mixture apply mullen or cabbage leaves steeped in vinegar.

Nerve and Bone Liniment.–One ounce spirits of turpentine; ½ oz. organum oil; 1 oz. oil of spike; 1 oz. British oil; 1 oz. tincture of myrrh; 2 oz. compound tincture of myrrh, or (tincture capsicum,) 2 ozs. tincture of camphor. For any old chronic complaint add 1 oz. tincture cantharides. We have used this lin ament for over 20 years on man and beast, for sprains, bruises,

cuts, burns, and rheumatism. It will pay every one to keep it on hand.

A GERMAN LINIMET.—To reduce swelled legs, and strengthen the tendons after hard drives. 1 beef gall.; 1 oz. oil of spike, 1 oz. gum myrrh; 1 oz. organum; ½ oz camphor; add to 1pt alchohol bathe the swelled parts freely every 4 four or six hours; bandage the legs if it is freezing weather or cold winds.

1. Wash for Mange or Farcy. Vinegar 1 pt.; ½ oz. camphor; blue ointment 2 oz.; spirits amonia 2 oz.; fish oil, 6 oz.

2. Linseed oil 7 oz.; turpentine oil 5 oz.; oil of tar 5 oz.; mix and wash the parts affected.

A cheap liniment for fresh sprains on any part of the animal. Take vinegar 1 qt.; carbonate amonia 4 ozs.; shake and bathe freely; an approved remedy.

GERMAN VEGETABLE LINIMENT–For tetter worm, scald head, salt rheum or any scrofula on the skin. Take 1 lb. burdock roots; ½ lb. yellow dock roots; ½ lb. tobacco; ½ lb. sarsaparilla, roots; 4 ozs. jimson seed; 4 oz. of white walnut bark. Boil all these roots and barks together in 1½ gallons of water 20 minutes; strain off and boil down to ½ gallon; then add 4 oz. of hemlock oil; bottle and cork tight. An approved German cure for the above diseases.

RECIPE FOR GERMAN OINTMENT.—Take butter, 1 lb.; beeswax, 1 oz.; white turpntine, 1½ oz.; olive oil, 7 oz.; red lead, 4 ozs.; camphor gum, 1½ oz,; melt and stir slow, vial or box for use. The German ointment is good for gathered or cake breasts or lame back, or to annoint a cows bag which is affected with swollen udder.

GREEN OINTMENT.—Take 6 lb.; of lard, put into a ten gallon kettle; add 2. gallons of water; cut jimson weeds seeds and all, fill them in, and cook them slowly, from four to six hours; and cook all the water out; then put into a jar; add to each pound of ointment, 1 oz. of turpentine. This is cheap and good stable ointment—good for scratches, galls, cuts, shoulder bruises, &c.

IODINE OINTMENT.—Excellent for man or beast. For rheumatism, sprains, burns, swellings, bruises, or any inflammation on man or beast; chapped hands or lips, black eyes, or any kind of bruises. Take fresh butter, 2 lbs; tincture of iodine, 1 oz; oil of organum, 2 oz.; mix well for fifteen minutes, when it is fit for use. Apply every night and rub in well with the hands. If for human flesh, lay on with warm

flannel.

LINIMENT FOR SWELLINGS.—Linseed oil, ½ pt; tincture iodine, 3 oz; turpentine, 4 oz.; oil of organum, 1 oz., Shake well and apply every day. Rub it in well with your hands. Wash the part clean with soap and water before applying it. This is good on any swelling.

LINIMENT FOR STIFLE SPRAIN.—Take three oz. muriatic acid,; 4 oz. oil of spike; 3 gills, spirits of turpentine; to which add 1. pt. or cider vinegar; bathe the stifle every four hours until cured.

A LINIMENT TO USE INTERNALLY AND EXTERNALLY FOR DISEASES OF THE BLADDER AND KIDNEYS.—Take 1 qt. fish oil; 2 oz. pulverized camphor; 2 oz. oil sassafras; 2 gills turpentine; bottle, for use internally or externally; give on the tongue 25 drops every hour.

CURE FOR ERYSIPELIS—Take blue flag root, grate fine one tea cup full, add half pint of milk and boil moderately for about half an hour; this should be made into poultices of convenient size: before the poultices are applied, however, the hands should be thoroughly washed with soap and sand to bring about a speedy circulation of the blood; after this rinse the hands in cold salt water and sugar of lead, and lay them on the parts affected; then wash the hands in fresh water, and so continue until the painful feelings are abated. Then apply the poultices; which should be cold. If necessary any number of poultices may be applied in the same manner. The poison of the blue flag, sugar of lead kills the disease and the milk prevents any injury that may arise from them.

HOW TO DETECT, AND CURE COLIC.—When the prescription laid down in the preceding instructions can not be obtained. Place the horse in such a position that his hind feet may be considerably higher than the fore ones. If he is troubled with the colic, the position refered to will cause the pain to cease, and he will stand quietly. If by trial it is found he has the colic, then the following speedy treatment is necessary. Take 1 qt. of strong salt water, warm it and drench the horse with it; then then give him moderate exercise.

Take one gill of turpentine, 1 gill of opium, dissolved in whisky, add 10 drops of Belladonna; one quart of water, milk warm. Drench the horse and move him about slowly. If there is no relief in fifteen minutes, take a piece of chalk, about the size of an egg; powder it and put it into a pint of ci-

der vinegar, which should be blood warm, give that, and then move him as before.

ANOTHER.—Take 1 ounce laudanum; 1 ounce of ether; 1 ounce of Tincture of Asafoetida; 2 ounces Tincture of Peppermint; add 10 drops Aconite; put all in a quart bottle; shake it well and drench the horse.

RECIPE FOR MAKING THE CHAMPION IVORY CEMENT OR ENGLISH GLUE.—Take 4 pts. of water; 1 lb. of white glue; place in a kettle; boil slow until thoroughly, meltedtake off and have ready ½ lb. fine flour of white lead; stir in the above thoroughly; then take 4. ozs.; of alchohol, in which dissolve ½ oz. camphor gum; pour in the above stirring thoroughly; the bottle for use. This cement is one of the best remedies i use, as a secreter to stop blood. Its medical properties a good to apply to any open wound; to make adhcsive plaster to hold any wound together, it has no equal: to mend an furniture or glass ware that is kept in the dry, it is unequal ed. To use, set the vial in some warm water until the cemen is melted, then apply it as the case requires.

A LIQUID HARNESS AND SHOE POLISH.—Take ½ lb. gu_n shelac, 1 oz. of lamp-black, 2. oz. camphor gum; put in a bottle and add alchohol enough to cover well; let it stand in warm.place three days. Harness should be prepared for polish, by taking apart,and washing well with soap and warm water, so as to remove all gum and grease; after which the polish should be applied when the harness are nearly dry. The application may be made with a brush or any thing convenient.

RECIPE FOR STOPPING BLOOD WHEN BLED IN THE MOUTH. —Take a small linen or flax-cord, raise the upper lip, pass the cord above the cut on the inner side, pass it to the front and tie as high up as possible tolerable tight. It never fails to stop the bleeding.

TO INCREASE THE SEXUAL DESIRE IN STALLIONS WHEN NEEDED.—1. Feed a tea cup full of midlings or shorts once or twice a day for two weeks.

2. Take ½ pound of Fennigreek, powdered; divide into twelve doses, give one every other day in the usual feed.

3. Take Spanish fly ¼.lb. powder, divide into twelve doses, give one every other day, which will produce the desied effect.

CONTENTS.

———:o:———

	PAGE.
Preface.	1

THE HORSE.

Pathology of	7
Eye, Inflammation of	10
Eye Washes	11
" " for man or beast	12
Blind or Wolf Teeth	12
Catarrh of the Lachrymal	13
Moon Eyes	14
Fistula	15
Fistula, or Poll Evil, (Recipes.)	15
Glanders	17
Catarrh or Cold	19
Glanders, cure for	19
Alterative	20
Glanders etc., German cure	20
Staggers, Treatment	21
Colic	21
Colic, Flatulent	22
Liver or yellow-water, Diseases of	23
Fever, Lung	24
Pleurisy	25
Lungs, Inflammation of	26
Condition, Want of	28
Stone or Gravel	29
Sheath, Foul	30
Staggers, Blind	31
" Treatment of	31
Distemper	31
Gleet, Nose discharge	32
Farcy, Butten	32

Farcy Water..... 33
Mange..... 33
" Treatment of..... 33
Surfeit..... 33
Margins, or Dumbness..... 34
Bowels, Inflammation of..... 35
Worms..... 36
Botts..... 37
Roaring..... 39
Wind, Broken..... 40
Tetanus or Lock Jaw..... 40
Bleeding..... 43
Hemorrhage..... 44
Sweeny..... 44
" Treatment of..... 45
" of the hip..... 46
Stifle Sprain..... 46
Capped Hock, or Haunches..... 48
Spavin, Ringbone etc., Instructions..... 48
Founder, first stages..... 50
" Acute..... 50
" In feet..... 52
Hoof Bound..... 53
Hoofs, Brittle or Spongy..... 53
Hoof Evil, Thrush etc..... 53
Scratches, Cure for..... 54
Ointment..... 54
Hoof medicine..... 54
Hoof, Gravel in..... 55
Corns—Cure for..... 56
Lampas..... 57
Big or Milk Leg..... 57
Scouring..... 57
Shoeing..... 58
Hoof Sound, How to Judge..... 59
Hoof, Its formation and structure..... 61
Castrating etc..... 67
Rupture..... 71
" Treatment of..... 72
Collar Bruises..... 74
Docking..... 75

Seaton, How to apply..... 76
Fractured Bones..... 77
Stable management..... 82
Feeding..... 87
Pasturage..... 91
Breeding..... 94
Management..... 102
To Throw a Horse..... 103
Bitting Machine..... 104
Learning to lead..... 105
Pulling on Halter or Bridle..... 105
Teaching to follow..... 106
To Break from jumping..... 106
" Kicking in Harness..... 107
" Runaway..... 108
" Balking..... 109
Smellins sense of..... 110
Horsemen, Prevailing opinion of..... 111
Colt, Approaching the..... 112
Treatment, Remarks on..... 116
Horse Talk..... 117
" Points of, Physical structure, &c..... 118
" Color of..... 125
" Terms denoting parts of..... 126

CATTLE.

Cattle Raising..... 127
The Cow..... 129
Weeds..... 130
Sore Teats..... 131
Parturition, Relief..... 131
After Birth, Retention of..... 133
Fundament, casting of..... 133
" German cure for..... 134
" Indian Cure for..... 134
Cancer cure, Indian Vegetable..... 135
" German..... 135
Horn distemper..... 136
Bloat..... 137
Inflammation, or Red Colic..... 137
" Liver etc..... 137

Trembles or Milk Sickness 138
Milk Fever 139
Blain 141
Murrain 142
Bladder, Inflammation of 144
" Stone in 145
Eye, Diseases of 146
Hove, or Hoven 147
Choaking 149
Locked Jaw 149
Poison 150
Wounds 151
Angle Berries 153
Foul Foot 153
Mange 154
Warbles 154
Altering or Spaying 154
Estimate of Weight 156
Calves—Hints on care 158
Birth 158
Bleeding from Navel 159
Diarrhea 159
Costiveness 160
Hoose or Cough 161
Canker in the Mouth 162

SHEEP.

Their value etc 163
Breeds 164
Spanish Merino 165
Saxon Merino 165
Leicester, The new 165
South Down 166
Coltswold 166
Cheviot 166
Lincoln 167
Management 197
Feeding 197
Salt and Water 168
Shade 199
Lambing 199

Weaning 169
Castration and Docking 170
Diseases and cures 171
Diarrhea 171
Costiveness 172
Staggers 173
Red water 175
The Blood 175
Giddiness in the Head 176
Inflammation of the Brain 176
Catarrh 177
Inflammation of the Lungs 177
Influenza 178
Hoove or Blown 178
Jaundice 179
Rot 179
Scabs or Mange 180
Lice or Ticks 181
Diarrhea 182
Indigestion and Debility 183
Blindness 183

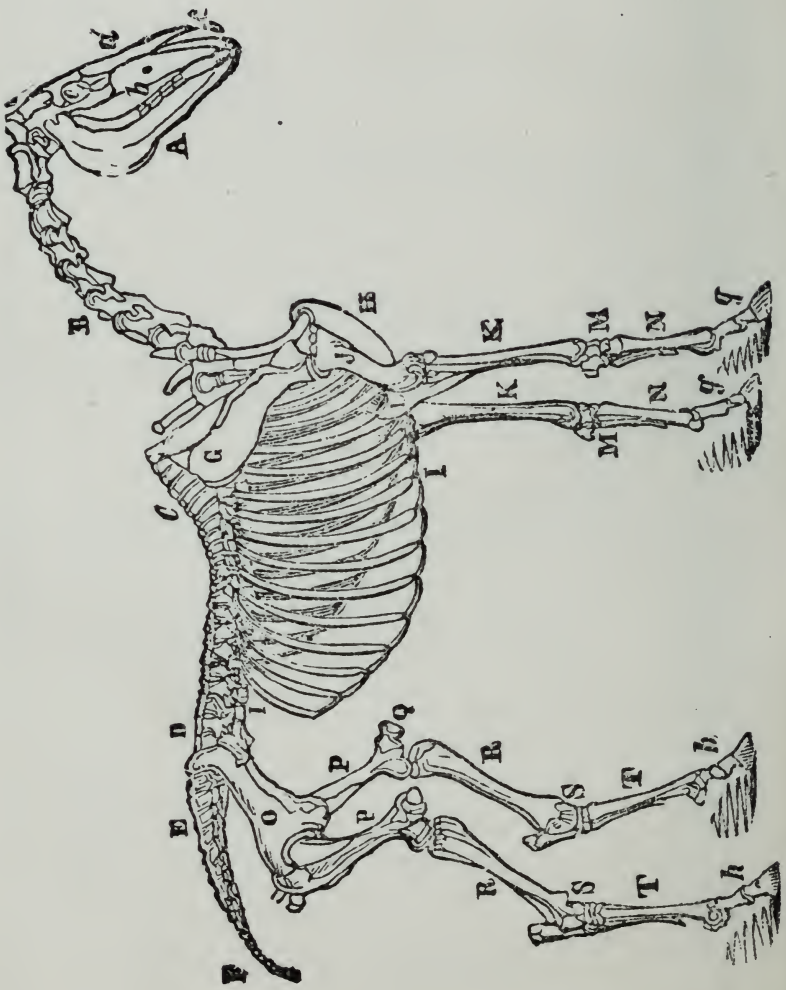
HOGS.

Hints on Feeding etc 184
Kidney Worm 185
Costiveness 186
Mange 186
Sore Ears 186
Quinsy 187
Measels 187
Cholera 187
Breeding 188
The Berkshire 189
The Suffolk 189
The Chinese 190
The Essex 190
The Chester 190
Crossing 191
Feeding 191
Spaying and Altering 192

RECIPES.

Veterinary Pharmacopoeia 194
Diarrhea 195
Alteratives 195
Thrush, Foot Rot etc 195
Heel cracks, Wounds etc 195
Grease Paste 196
Clysters 196
Blisterers 196
Balls, Cordial Cough and Duiretic 197
Powders, Duiretic 197
Urine Drink 197
Embrocation 197
Eye Washes 197 198
Eyes—Scummed, Weak and Bruised 198
Fever Powder and Drink 198
Malignant Epidemic Fever 198
Purifying Stables etc 198
Poll Evil Mixture 198
Foot Stopping—Hoof Liquid 199
Purging Medicines 199
Mange, Wash for 199
Coring out—Destroying Fungus—Wash for 199
Healing Ointments 199
Scab etc 199
Powders- Cleansing 199
Powder, Condition 200
Heaves, Cure for 200
Contageous Disease—to prevent 200
Rheumatism, Cure for 200
Liniment, Nerve and Bone 200
Liniment, German 201
Ointment, German 201
Ointment, Green, Iodine 201
Liniments, Swellings, Sprains etc 202
Erysipels, Cure for 202
Colic 202 203
Cement, Champion 203
Polish, Harness and Shoe 203
Blood, Stopping 203
Stallions, Sexual desire 203

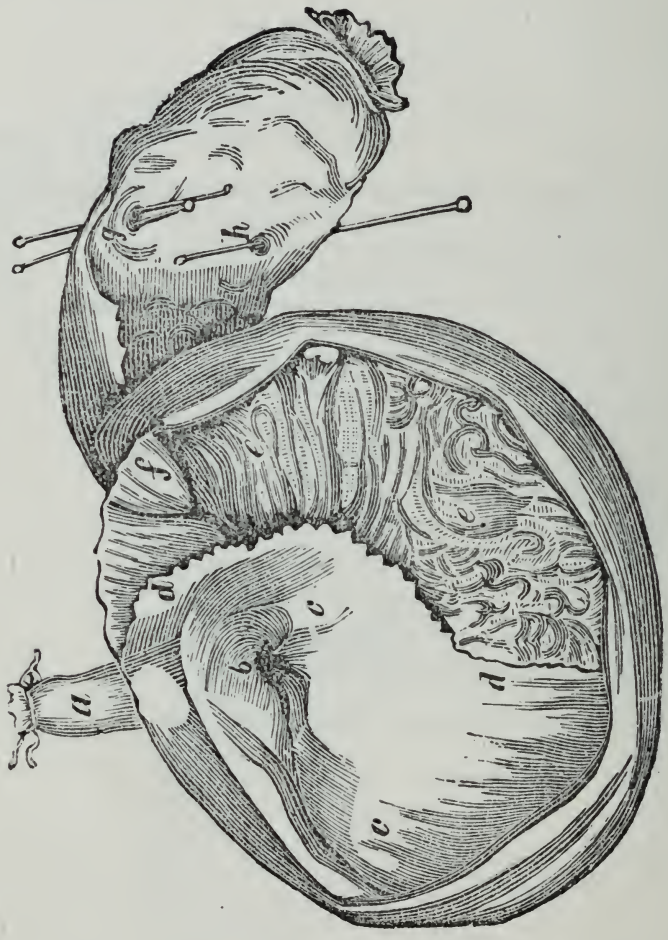
Anatomy of the Horse.



Explanation of Cut on Opposite Page.

A—The head.
a—Posterior Maxillary, or under jaw.
b—Superior Maxillary, or upper jaw.
c—Orbit, or cavity containing the eye.
d—Nasal bones, or bones of the nose.
e—Suture dividing the paristial below from the occipital bones above.
f—Inferior Maxillary bone, containing the upper incisor teeth.
B—The Conical Vertebrae, or bones of the neck.
C—The Dorsal Vertebrae, or bones of the back.
D—The Lumbar Vertebrae, or bones of the loins.
E—The Sacral Vertebrae, or bones over the haunch.
F—Caudal Vertebrae, or bones of the tail.
G—Scapula, or shonlder blade.
H—Sternum, or fore part of the chest.
I I—Costae, or ribs.
J—Humerus, or bone of the arm.
K K—Radius, or bone of the fore arm.
L—Ulna, or elbow.
M M—Carpus, or knee.
N N—Metacarpal bones.
O—Haunch.
P P—Femur, or thighs.
Q—Stifle joint with the Patella.
R R—Thibia, or thigh bones.
S S—Tarsal bones.
T T—Large Metatarsal bones.
h h—Os Coronal.
g g—Os Suffraginis.

THE STOMACH.



(See Page 22.)

Explanation of Cut on opposite Page.

a—The Asophagus or Gullet, extending to the Stomach.

b—Entrance of the Gullet into the Stomach. The circular layers of the muscles are very thick and strong, and which by their contractions, render it difficult for the food to be vomited.

c—Portion of the Stomach covered by Cuticle or insensible skin.

d d—Margin separating the Cuticular from the Villous portion.

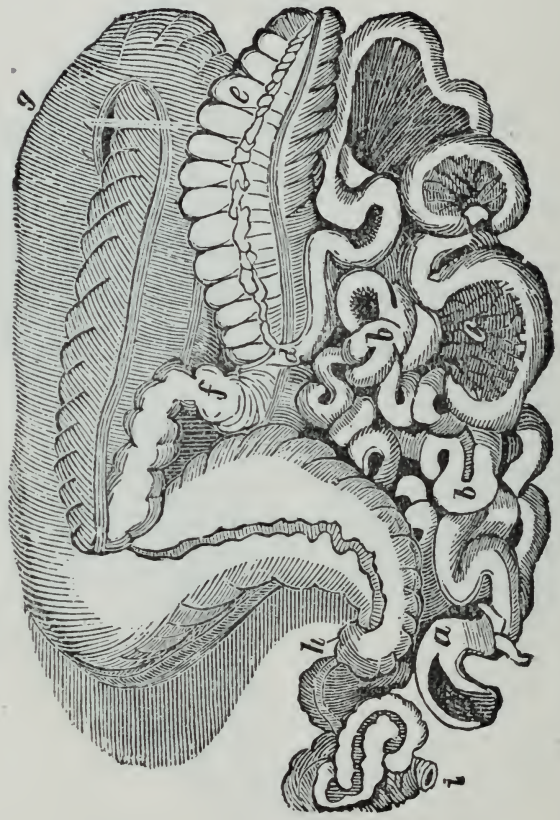
e e—Mucous or Villous portion, in which the food is principally digested,

f—Communication between Stomach and first Intestine.

g—The common orifice through which the Bile and Secretions from the Pancreas pass into the first Intestine. The two pins mark the two Tubes here inserted.

h—A smaller orifice through which a portion of the Secretions of the Pancreas enters the Intestines.

INTESTINES.



(See Page 35.)

Explanation of Cut on opposite Page.

a—Commencement of Small Intestines, The Biliary, and Pancreatic ducts a little below.

b b—The Convolutions or windings of the Small Intestines.

c—Portion of the Mesentary, a fold of Serous membrane, which hanges over the greater part of the Intestines.

d—Small Intestines, terminating in the Caecum

e—The Caecnm, or blind Gut, with the bands runniug along it, puckering and dividing it into numerous cells.

f—Beginning of the Colon.

g g—Continuation and expansion of the Colon, also divided into cells.

h—Termination of the Colon in the Rectum.

i—Termination of the Rectum at the anus.

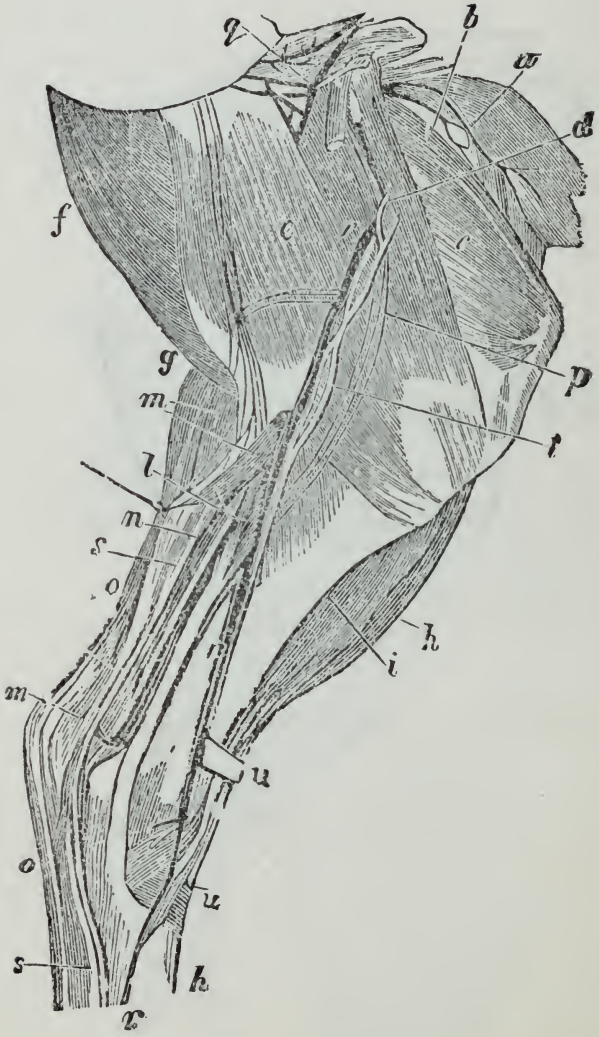
REMARKS.

The three following cuts, representing the Head, and outside view of the Hip, from thence to the Tarsal bones of the hind leg, showing the various muscles and arteries ; also an inside view of the same, will be found of great interest to the student in Veterinary Surgery; and in order that they may exercise their skill, we omit giving reference to the different points, merely refering them to the skeleton given on a preceding page.

The Head.

Outside View of the Hip.

Inside View, Anatomy of the Hip.



NOTICE.

Persons desiring one or more copies of this work, will be supplied by addressing the Author,

Professor Bowersmith,

WESTERVILLE, FRANKLIN CO., OHIO,

and enclosing the price, $3.00, for which it will be sent **POSTAGE FREE**, to any part of the United States.

CLUBS OF TEN, sent in one package, - $25 00

A Liberal Discount to the Trade.

Remit by Post Office Order, or Bank draft on New York.

LIBRARY OF CONGRESS
0 002 843 214 8